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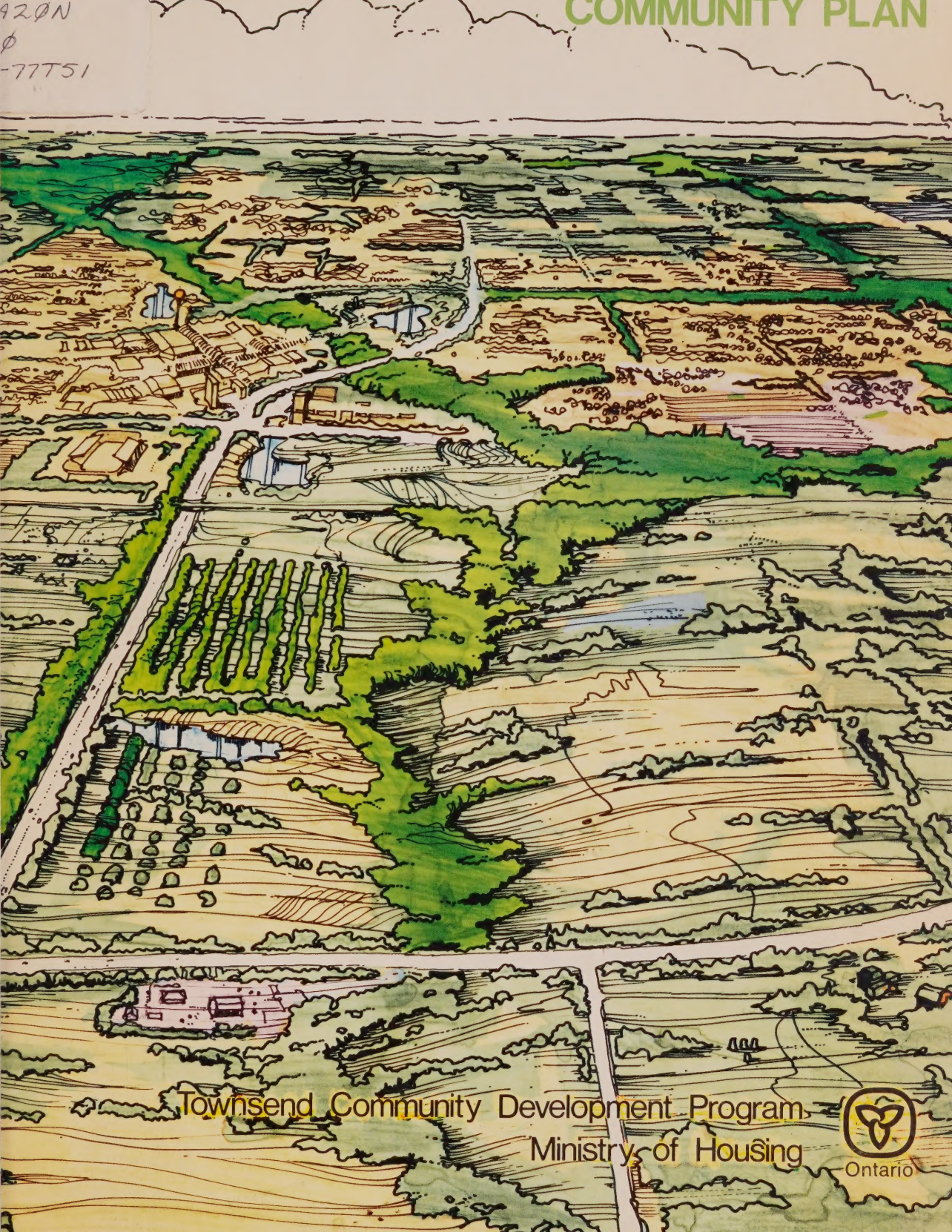


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TOWNSEND

COMMUNITY PLAN



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Townsend Community Development Program
Ministry of Housing



"THIS REPORT WAS PREPARED AS BACKGROUND MATERIAL
IN THE PLANNING OF THE TOWNSEND NEW COMMUNITY,
AND DOES NOT NECESSARILY CONSTITUTE A
RECOMMENDATION OF THE MINISTRY OF HOUSING
NOR APPROVAL OF THE GOVERNMENT OF ONTARIO".



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Ministry of Housing

29 March 1977

I am pleased to present the concept plan and detailed design of the first housing area for the new community of Townsend prepared by the consulting firm of Llewelyn-Davies Weeks Canada Ltd. and associated consultants, under the direction of the Ministry of Housing's Townsend Community Development Program.

The Townsend planning process was a logical extension of the joint provincial-municipal approach to planning in Haldimand-Norfolk that began in 1969 with the Haldimand-Norfolk Study. Consequently, this plan has been prepared with the assistance of many provincial and municipal officials.

The plan, as contained herein, will be reviewed in the weeks ahead by the regional and area municipality officials, together with other concerned public and private agencies and interested citizens. This plan, as written or revised, will not be considered an official document until it is adopted within the Regional Official Plan under the terms of The Planning Act.

I would like to take this opportunity to thank all those who have contributed to the Townsend program and, in particular, to express my personal appreciation to the members of the Townsend Advisory Committee for the excellent assistance and advice they have provided throughout this phase of the planning process.

John R. Rhodes,
Minister.

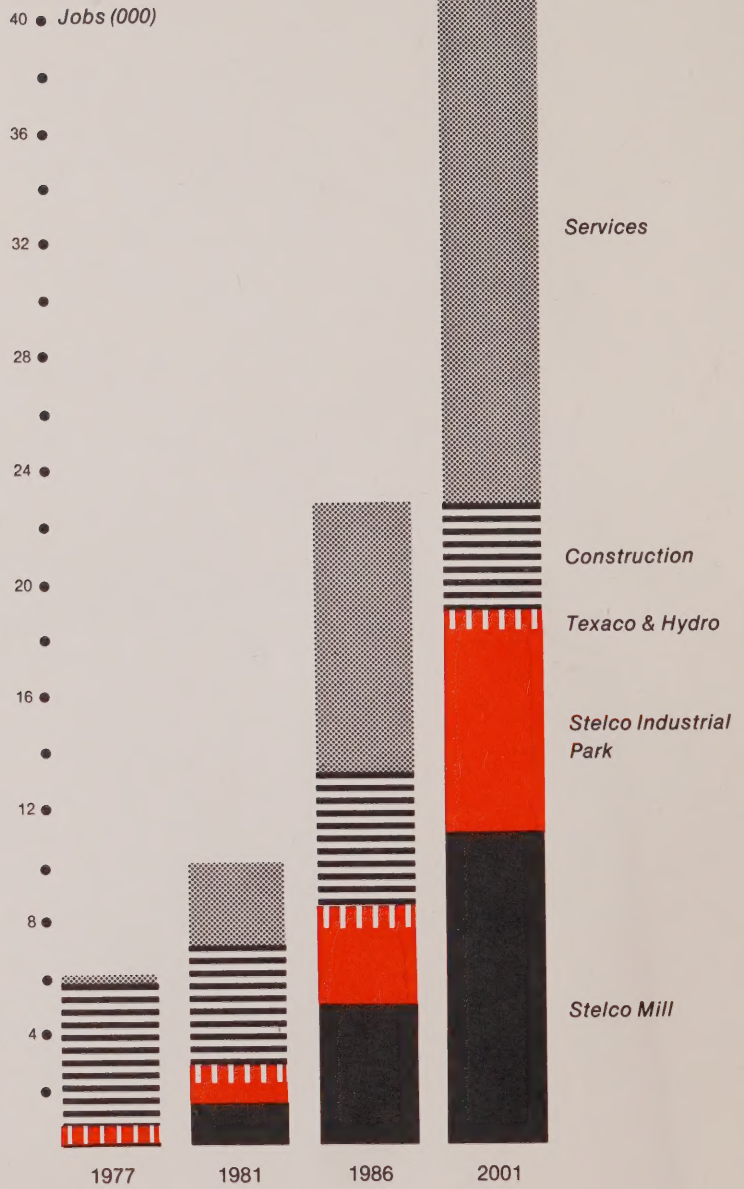
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Employment Projections
Source: PBA



Introduction

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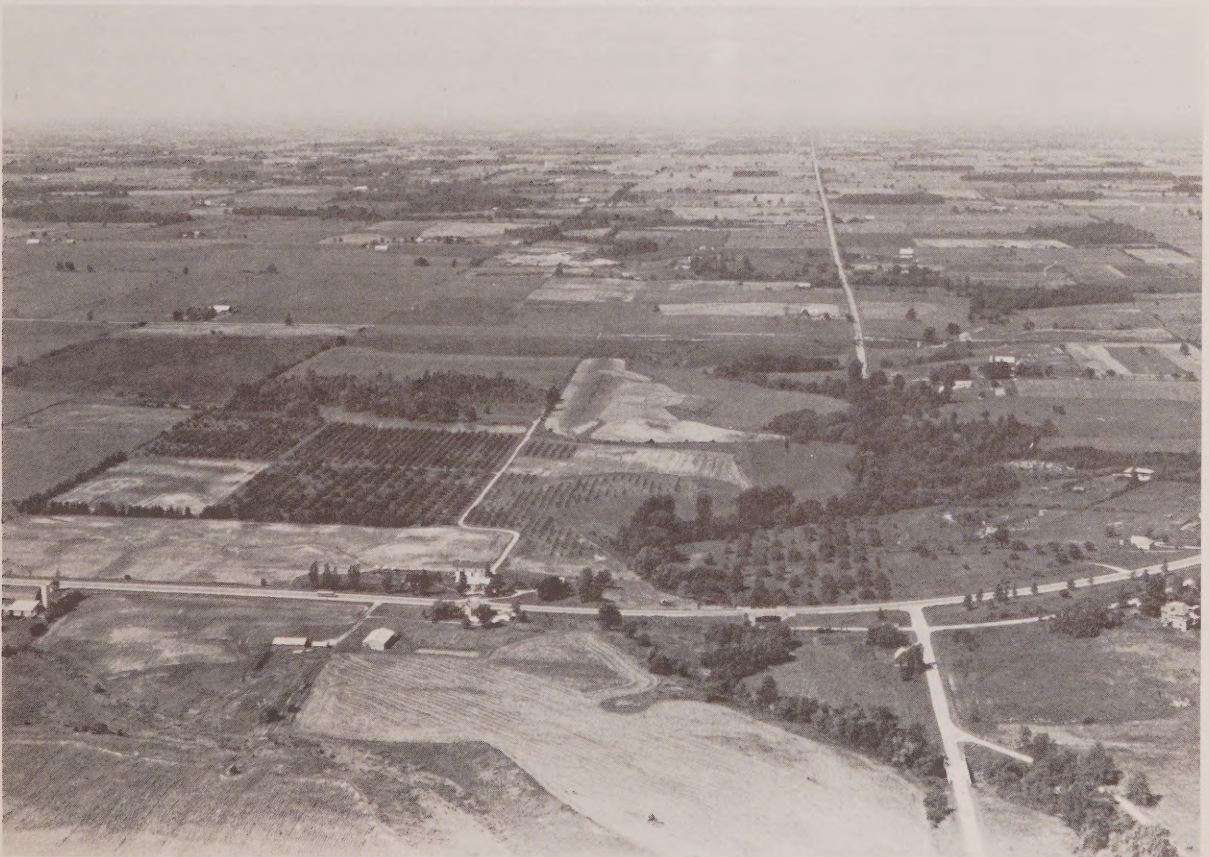
Basis for Townsend

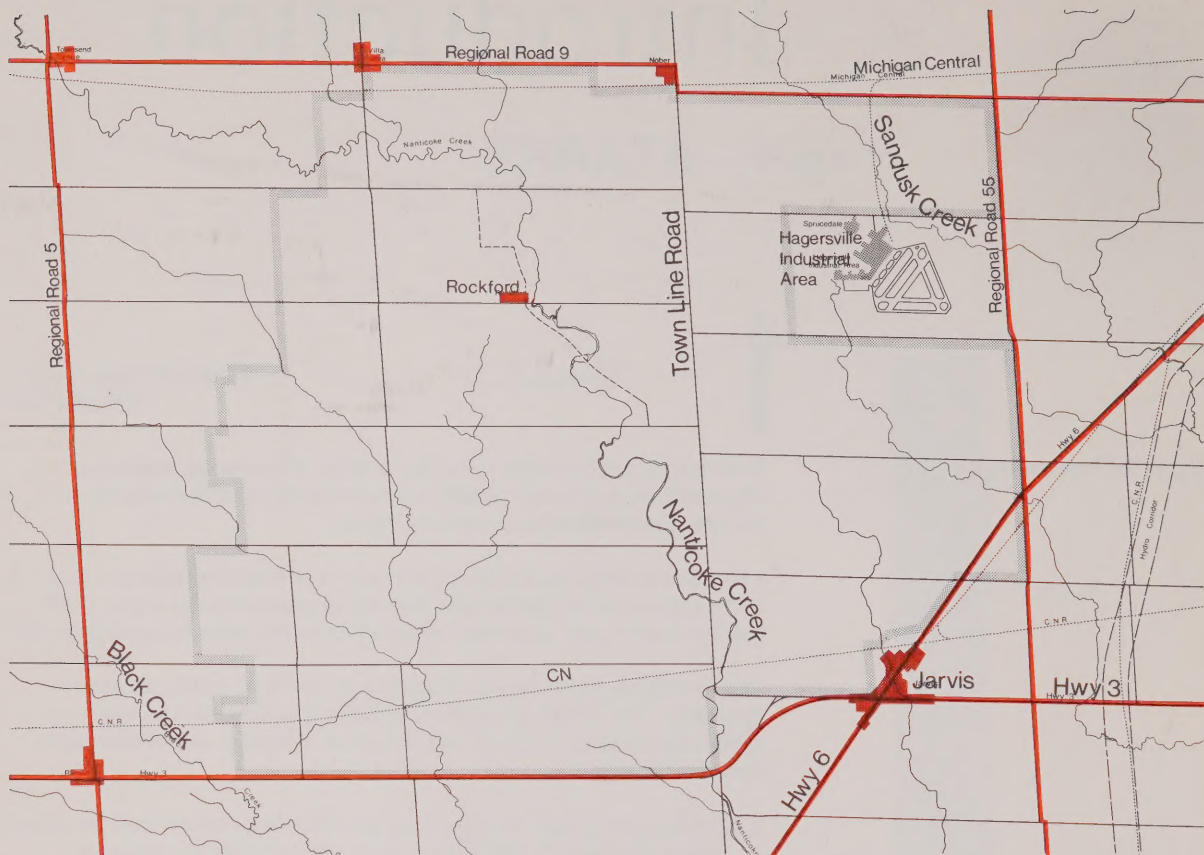
Townsend is a new community within the City of Nanticoke, planned to accommodate a potential 100,000 people in the Regional Municipality of Haldimand-Norfolk in southwestern Ontario.

Townsend is being developed by the Province of Ontario primarily to respond to the substantial new population that will be attracted to the region by the major industrial complex under construction on the north shore of Lake Erie.

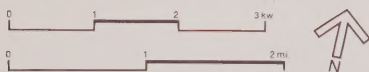
This complex in Nanticoke introduces a new element into this essentially rural region with its many small communities. Townsend will be able to respond effectively to the resulting pressures for development by addressing these key issues:

- 1) Good quality agricultural land must be protected wherever possible. Compact and orderly development in Townsend can minimize the use of agricultural land for urban needs in the region, and ensure that the land that will be needed for urban development can be in productive use for as long a period as possible.





Project Area



- 2) The rising cost of housing has been a major concern of the public and government in recent years. Most of the families attracted to the region by the new job opportunities will have modest incomes. Affordable housing can be provided for these families in Townsend through the economies derived from comprehensive planning coupled with public land assembly.
- 3) The industrial development and resulting urban growth cannot be accommodated without major new regional services for water and sewage. The costs of these services can be kept to a minimum only by concentrating most of the growth in one area near the Nanticoke industrial complex.
- 4) The recently created Regional Municipality of Haldimand-Norfolk lacks a central and dominant focus. Townsend is strategically located in the centre of the region between the two former constituent counties and near the Nanticoke complex. Therefore, it is well placed to assume this vital role, and provide a new regional centre with a higher level of services and facilities.
- 5) The intimate character and quality of life of the existing rural centres can be quickly destroyed by rapid and extensive growth. With the bulk of the new development concentrated in Townsend, these communities will still be able to grow at reasonable rates, but will be protected from disruptive change.

Background to Townsend






In the late 1960's, the Steel Company of Canada Limited (Stelco), Ontario Hydro and Texaco Canada Limited initiated the development of a major industrial complex on the north shore of Lake Erie in what is now the City of Nanticoke. This will lead to substantial urbanization in this largely rural area.

In response to the development, the Province of Ontario initiated in March of 1969 the Haldimand-Norfolk Study to prepare recommendations on the future physical development and the local government organization in the counties of Haldimand and Norfolk.



Regional Areas



-  **Townsend Site**
-  **Regional Municipality of Haldimand-Norfolk**
-  **City of Nanticoke**
-  **Nanticoke Industrial Area**
-  **Regional Highways**

As a result of this study, the Regional Municipality of Haldimand-Norfolk was created in 1974, and agreement was reached on the concept of an hierarchy of urban places in the region focused on a new major urban centre.

In April of 1974 the Regional Council agreed “that the concept of a new town be adopted for the Region of Haldimand-Norfolk”. The Province began to purchase by agreement land on the Townsend site in May of 1974. Title to this land is now vested in the Ontario Land Corporation. The Regional Council endorsed Townsend as the site for the new community in January of 1975.

In May of 1975 the Townsend Advisory Committee, appointed by Cabinet, was established to advise the Minister of Housing on all aspects of the Townsend planning process. This committee, chaired by the Parliamentary Assistant to the Minister of Housing, is composed of the Regional Chairman of Haldimand-Norfolk, the Mayor of Nanticoke, the Chairman of Regional Council’s Planning and Development Committee, and a non-elected community representative. Throughout the planning process this committee has also provided an effective link between provincial and municipal policymakers and the technical staff.

The Townsend Advisory Committee, in conjunction with a panel of senior civil servants, selected the firm of Llewelyn-Davies Weeks Canada Ltd. as the prime consultant for the planning of Townsend, and a fifteen-month planning process was initiated in January of 1976.

The planning of Townsend was directed by the Townsend Community Development Program (TCDP) of the Ministry of Housing. TCDP supervised the consultants’ work and a wide range of associated technical studies, coordinated the involvement of the other ministries, and through its field office on the site liaised with the local officials and kept the public informed of the planning work as it developed.

In keeping with the joint provincial-municipal approach to planning in Haldimand-Norfolk that had preceded the Townsend project, a number of 9



Nanticoke Valley

committees were established to maintain open channels of communication.

To deal with the issues specific to the City of Nanticoke, the municipality in which Townsend is located, the Nanticoke Liaison Committee was formed. This committee, with representatives from the Nanticoke Council and the Townsend staff, provided a forum for consultation and exchange of information related to the planning.

Since many provincial ministries, as well as the municipalities of Haldimand-Norfolk and Nanticoke, had a direct interest in the planning of the new town, five technical committees were formed to coordinate their input into the planning process. Committee members not only made valuable contributions individually to the planning process, but also were able to speak for their respective organizations to clarify existing programs and resolve technical issues.

In addition, comments and suggestions were received from various interest and community groups in the region through the site office, open houses and public meetings. A list of acknowledgments is provided at the end of this report.

Summary of Study

The planning program for Townsend was geared to preparing in the fifteen-month period several levels of plans—ranging from a strategic plan that provides an overall framework for orderly long-term growth to more detailed plans for the initial development that can be taken to early implementation.

To allow for periodic review of the key planning considerations, the planning program was organized in three phases:

—In Phase I (January-March 1976) the planning criteria for the new community were established, the site conditions were reviewed, the overall development area for the community of 100,000 people was broadly determined, and alternative planning concepts were prepared for this area.



Introduction

1



—In Phase II (April-September 1976) the strategic plan for the community of 100,000 was prepared, the initial development area for the first 5,000 people and an intermediate area for 20,000 people were selected, and alternative plans prepared for these areas. Agreement was reached also on the site for a number of important early facilities, and the location of the initial access and services.

—In Phase III (October 1976-March 1977) the strategic plan was refined and the detailed plans for the initial and intermediate development areas were completed. A conceptual plan for the town centre and a draft subdivision plan for the first housing area also were prepared. Finally, special studies were carried out on residential site planning and landscaping.

An interim report was prepared at the conclusion of each of these phases. This report summarizes the major findings and recommendations of the entire study.

The major industrial developments at Nanticoke are expected to produce a dramatic increase in population within the region. The current projections of employment and population growth are summarized in Section 2 of this report, together with the resulting planning to date on regional roads and services.

The Townsend site, like most of the surrounding region, is attractive and sparsely settled rural land, well suited for the proposed urban development. The main features of the site—the existing development, natural systems, ground conditions, and agricultural uses—are all described in Section 3. These features have been used to define the potential area for urban development on virtually half the site, and a reserve for permanent agricultural use on most of the remainder.

The strategic plan for the community at the ultimate planned population level of 100,000 is presented in Section 4. This provides the overall framework for growth into the next century. It includes the major essential elements of the town: the arterial road network; land allocations for housing, shopping,

employment and community facilities; the trunk engineering services; and a town-wide park system.

The town centre has been planned to become the focal point for the new community as well as the region. The conceptual plans shown in Section 5 have been developed to ensure that the centre can serve the future needs, function effectively through various stages of growth, and become an exciting urban place.

A number of detailed plans, as presented in Section 6, have been prepared so that early development can proceed. The plan for the first stage of 5,000 persons provides a layout for the initial housing area, including sites for early facilities like the regional administrative centre and a community college. The draft subdivision plan, which sets out the building parcels for some 900 housing units and their supporting facilities, will be the basis for a formal planning submission. The preliminary layout for a comprehensively designed housing area and a landscaping scheme are also presented as a step toward creating an attractive early environment.

The planning for Townsend does not stop with this study. The steps and actions that must be taken toward implementation of the plans are summarized in Section 7. The prospective timing, financing and management of Townsend are also reviewed.

Regional Context

2

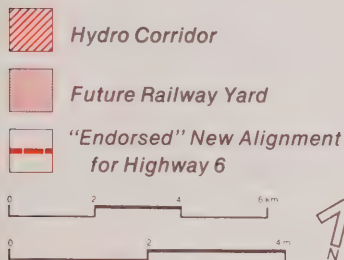


Regional Context

2

Townsend is situated in the Regional Municipality of Haldimand-Norfolk, a predominantly rural area in southwestern Ontario.

Employment Growth

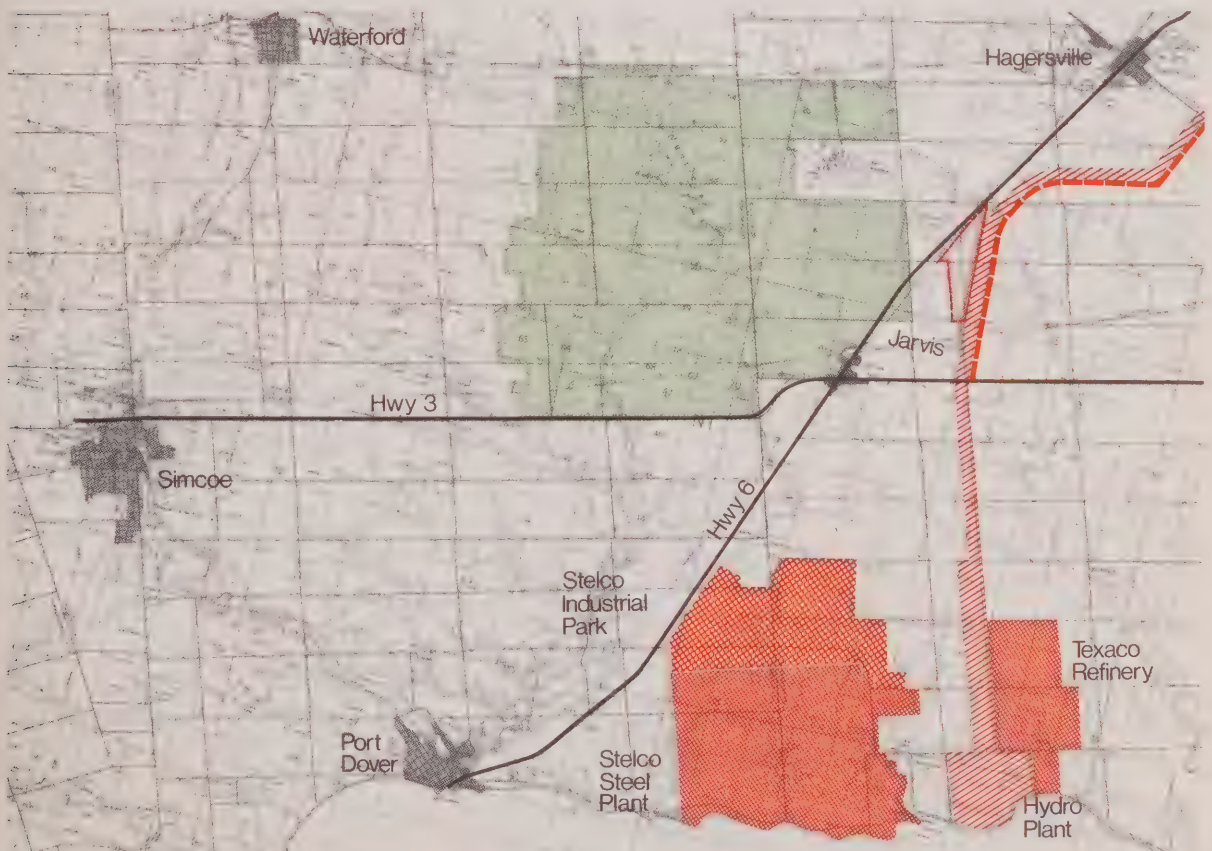


The regional employment in 1971 was approximately 37,000. Of this 17,000 was in the service sector, 10,500 in agriculture and 9,500 in manufacturing and construction.

A substantial growth in employment will be generated in the region by the major developments in the Nanticoke industrial area. These developments include a major steel plant by The Steel Company of Canada Ltd. (Stelco), an industrial park by Stelco for related industries, a new petroleum refinery for Texaco Canada Limited and a generating station by Ontario Hydro.

The Stelco steel plant will be the largest single employer in the area, with about 1,700 jobs expected in 1981 and over 11,000 in 2001. The first operational employees for the steel plant will be recruited in 1977.

Planning Context





Construction on the first of four stages of the plant is well underway, and completion is scheduled for late 1979 or early 1980. The first stage includes a raw materials dock, coke plant, blast furnace, basic oxygen furnace shop with continuous slab casting facilities, and a hot strip mill. The entire steel plant will cover about 1,450 ha (3,600 a) when completed.

The industrial park planned by Stelco will provide an estimated 700 jobs by 1981 and 7,000 by 2001. It will be developed on 1,000 ha (2,500 a) north of the Stelco steel plant. The first phase of the area is scheduled for development in 1978.

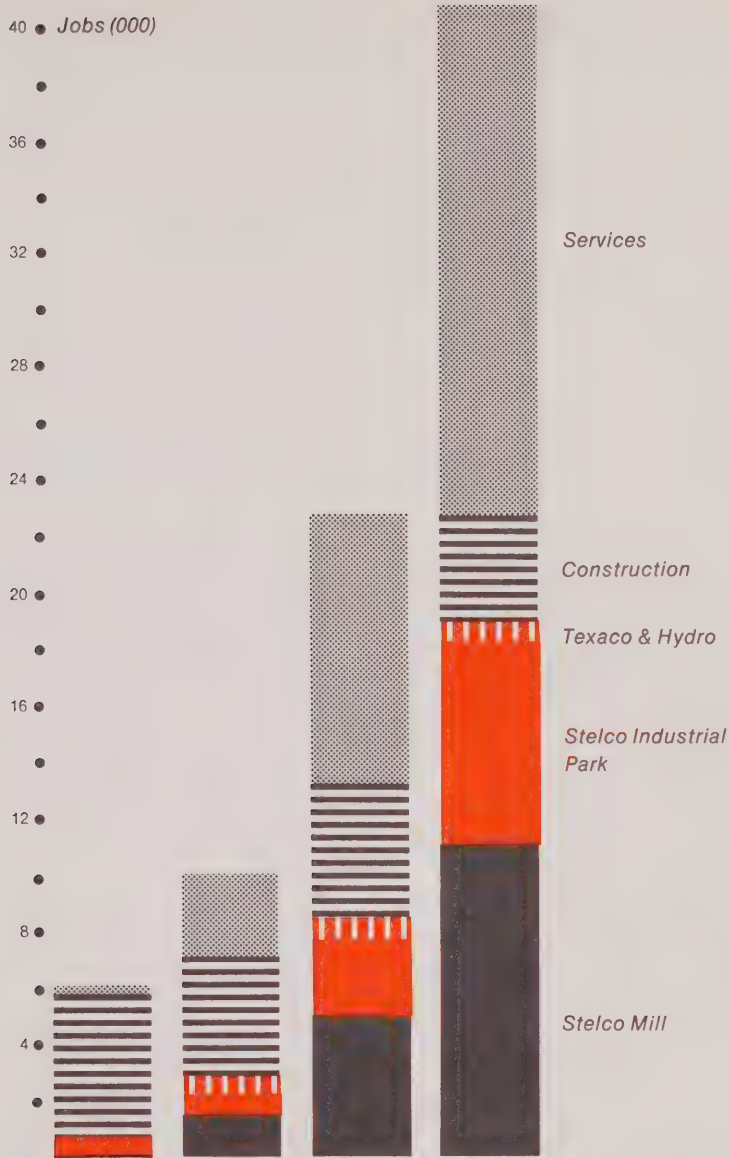
Texaco and Hydro are major capital intensive industries with relatively small employments. The Texaco refinery is expected to start up in mid-1977 and to have its full staff of 275 in 1978. The Hydro generating station is presently 75% operational and fully staffed with 400 employees.

Between 1977 and 2001, some 1,000 to 2,500 industrial construction workers will be employed at any one time on the Nanticoke complex, working chiefly on further phases of the Stelco mill and the industrial park.

As a consequence of these developments, the basic employment alone at the Nanticoke industrial area, at conservative estimates, is expected to amount to over 3,000 by 1981 and nearly 19,000 by 2001.

An allowance also must be made for the service and associated employment that will be attracted to the region. This employment includes the construction





workers, school teachers, shopkeepers, and the many other professions needed to support the basic industrial employees and their families. When these additional employees are included, the total new employment directly or indirectly attracted to the region by the Nanticoke developments is projected at about 10,500 by 1981 and 41,000 by 2001.

Population Growth

The present population of about 88,000 has been relatively stable to date, growing in the last 25 years by about 22,000.

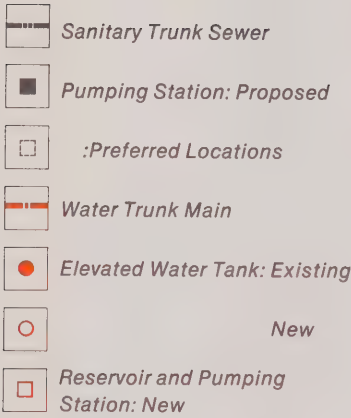
The population projected for the region is approximately 106,000 for 1981 and nearly 181,000 for 2001. Most of the population growth—some 15,000 by 1981 and 84,000 by 2001—is expected to be drawn into the region by the new employment opportunities generated by the Nanticoke industrial developments. The remainder of this growth is expected to result from the natural increase of the existing population.

Housing Situation

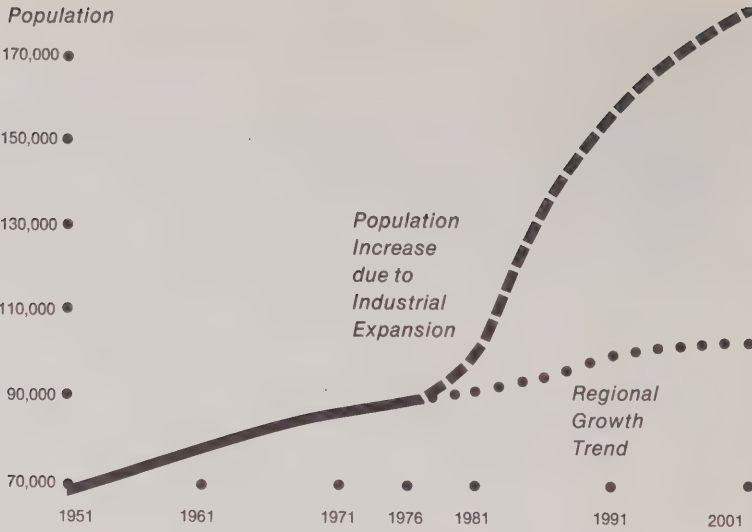
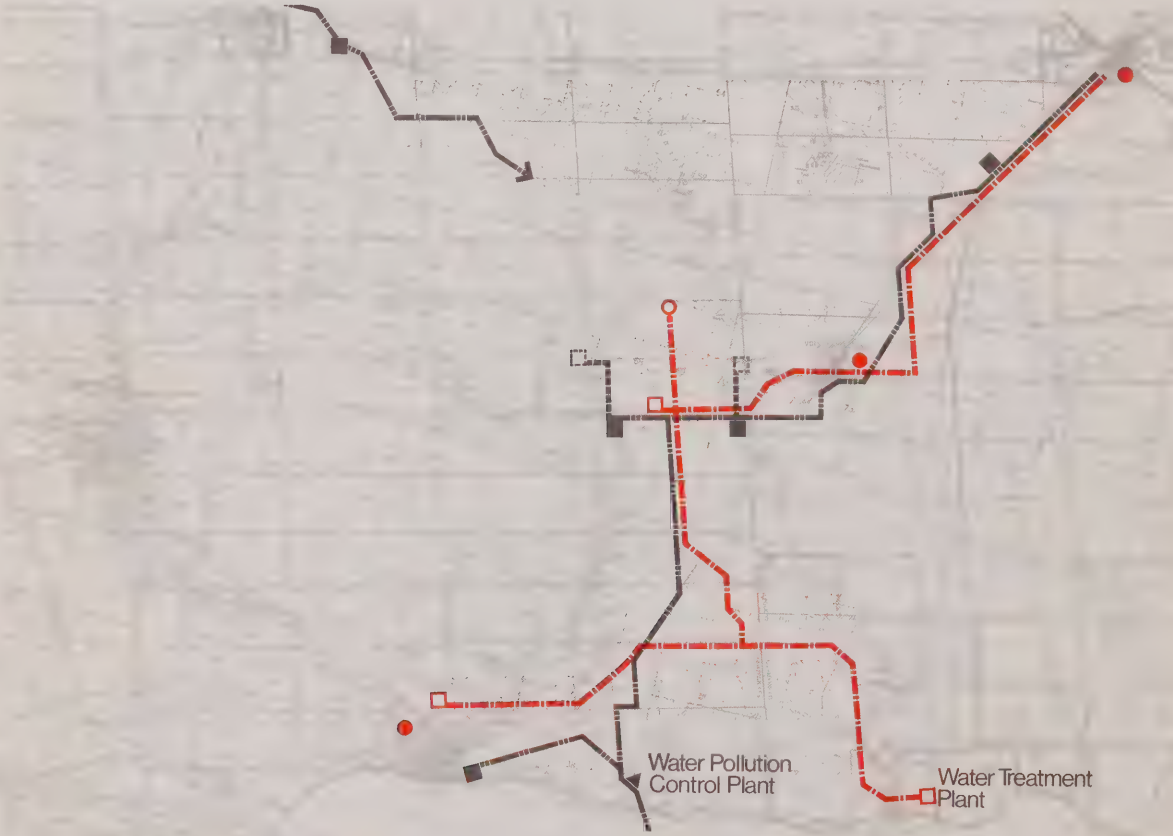
All of the existing communities have grown to date at relatively modest rates. Their housing has been supplemented by farm lot severances throughout the rural area, and converted summer cottages along the Lake Erie shoreline.

Developers have purchased or have options on land surrounding most of the existing towns in anticipation of a large demand due to industrial expansion.

**Population Growth in
Haldimand-Norfolk**
Source: Census and PBA



Regional Services



However, the ability of these communities to substantially expand is constrained by lack of services. Their servicing capacity, including improvements either scheduled or under construction, can accommodate a further 24,000 persons maximum, leaving a shortfall of about 69,000 additional persons to be accommodated.

Most of the new housing now being built or planned in the region is concentrated in the towns of Simcoe and Port Dover, and consists of single detached units in the upper price ranges. (\$50,000 or more in 1976 dollars.) While the supply of housing presently planned is ample overall, it does not well match the projected needs of the early workers requiring housing for \$40,000 or less.

Engineering Services

Major regional services for water supply and sanitary drainage are being designed by consultants for the province to serve the new industrial and residential development, and to overcome some of the existing limitations.

The new regional sewage system, as presently planned, will be provided to Townsend, Jarvis, Hagersville, Port Dover and Waterford, and the Stelco steel plant and industrial park. The new water pollution control plant will be located at the Nanticoke industrial area west of Stelco.

The new water supply system will serve Townsend, Jarvis, Hagersville and the Stelco industrial park and steel plant. The new water treatment plant will be located in Nanticoke east of Stelco. Construction of the first stage of the treatment plant, the trunk mains to Townsend and the elevated storage tank are scheduled for completion in time for the first development.

Transportation System

Highways 3 and 6, the two most important existing roads in the region, pass near Townsend and the Nanticoke industrial area. Both highways have been studied to assess the potential impact of the new development.

Highway 3, the two-lane arterial along the southern boundary of the site, is the





only continuous east-west route through the region. A total realignment of the road had been previously proposed. However, the length south of Townsend is most likely to be widened along its present right-of-way, and a bypass made around Jarvis.

Highway 6 to the east of Townsend is the north-south route that links the Nanticoke industrial area with Hamilton and Toronto. This road will be realigned from highway 3 northwards. The "endorsed" alignment follows the eastern side of the Ontario Hydro right-of-way. An alternative runs along the eastern boundary of the Townsend site. Based upon projected traffic flows, the section east of Townsend could be built in about ten years.



Project Area

3



Project Area

3

The Province designated a site of some 5,650 ha (14,150 a) for the new community. This area is more than enough for a community of 100,000 persons. A large site, however, has provided flexibility in selecting the most suitable areas for development, and in retaining the best farmlands and natural features.

Existing Development

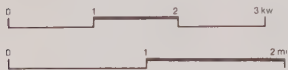
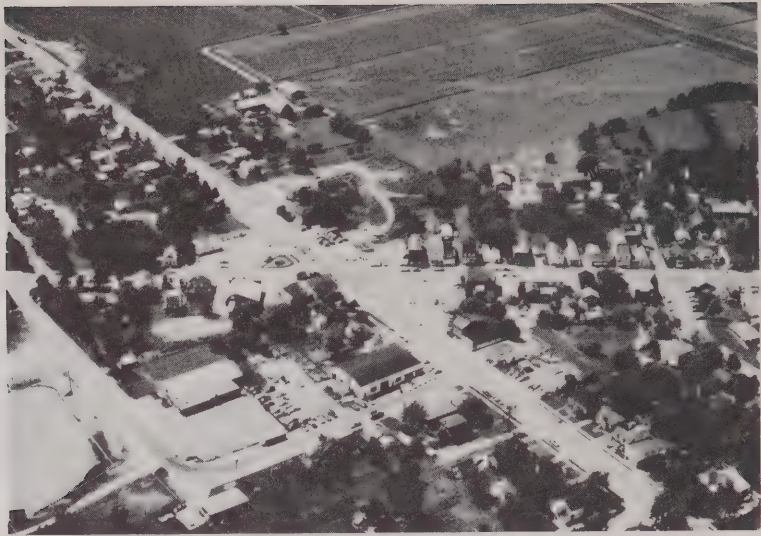
Like the surrounding area, the site is mainly flat farmland, sparsely treed and lightly settled. About 180 houses are located mostly in farmsteads along the concession roads.

Jarvis, southeast of the site, is a small farm service centre of 1,300 persons, with attractive tree-lined streets and substantial red brick houses.

The pocket of land to the northeast of the site is an industrial area on a former airfield. Most of the area is used by a packing and shipping company. The remainder is zoned for industry.

Rockford is an important cultural landmark within the site. Once a rural service





Development Features

centre, it now contains only a handful of buildings: a former schoolhouse, church and cemetery, and a few houses.

The farmsteads contain a number of farmhouses and buildings of architectural and historical interest—some dating from before 1850. A significant number occur west of the Nanticoke Creek along concession roads 11 and 13 in the former Townsend Township.

Several former mill sites are found along the Black Creek tributaries and Nanticoke Creek.

Pre-historic archaeological remains have been found over various parts of the site. Two potentially important archaeological sites are known. While a full





assessment of all areas must be made prior to development, it is expected that most sites found can be protected and will not constrain development.

The quarry in the Nanticoke valley is being excavated for low-grade aggregate for roadbeds. The lease for the present operations terminates in 1977. The quarry, although now unattractive, has the potential for being reclaimed and used as a recreation amenity.




The existing concession road network within the site is a rectangular grid. The east-west roadways are for the most part continuous, but offset at Townline Road. The north-south roadways have a much wider spacing. Because of interruptions by the stream valleys, neither of the two main north-south roads in the site connects directly to highway 3. Many of these roads are gravel surfaced.

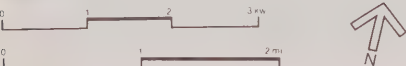
The site also is crossed by two east-west railway lines: the Michigan Central railway across the north and the Canadian National across the south.



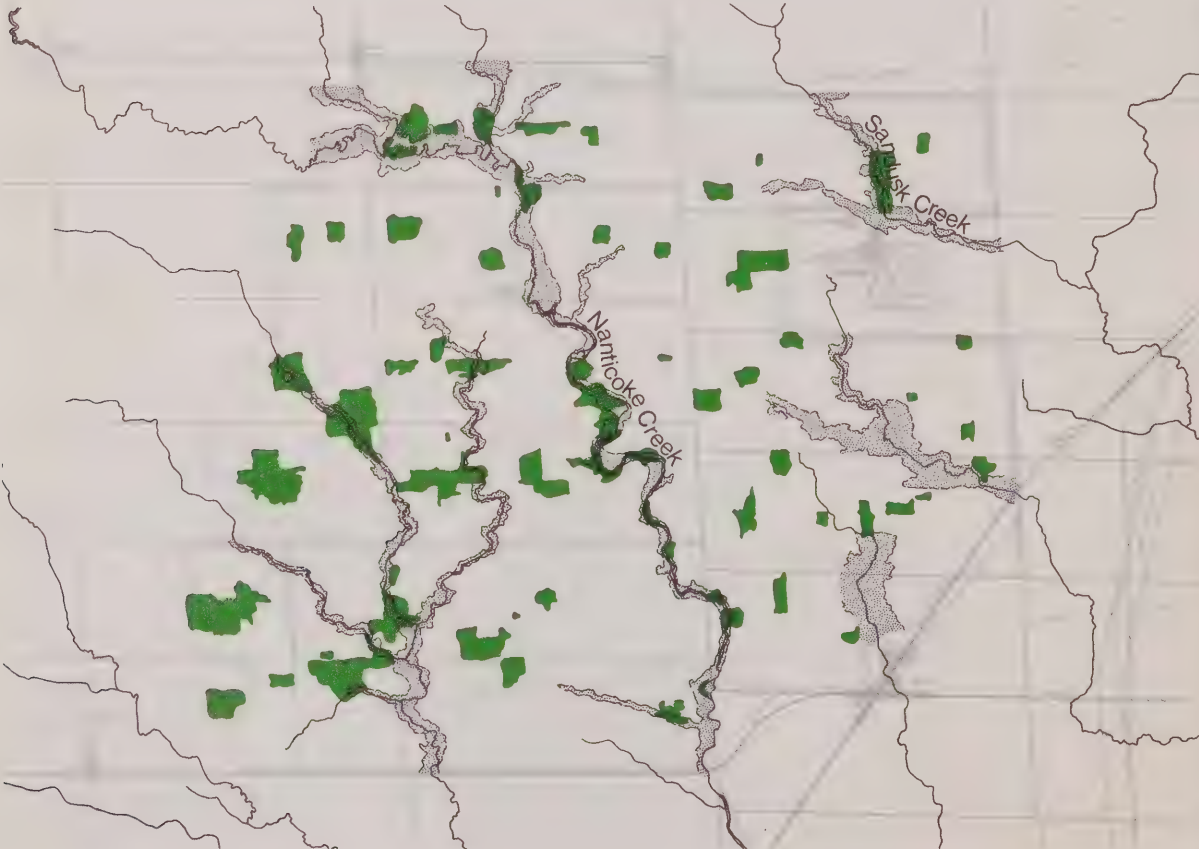


Natural Features

-  Major Woodlots
-  Stream Courses
-  Flood Plains of Stream Valleys



Natural Features



The site is crossed by three creek systems: the Nanticoke Creek, tributaries of the Black Creek and the Sandusk Creek.

The stream flow in the Nanticoke varies considerably and falls to a low level during the summer. The Sandusk tributaries are essentially swales receiving agricultural runoff. They, and the upper reaches of the Black Creek tributaries, are often seasonally dry.

The water quality of the streams is relatively poor, and generally deteriorates as they flow south. This can be attributed largely to agricultural practices and, in the case of Nanticoke Creek, to treated effluent from Waterford. The Nanticoke is capable of supporting typical warm water fish, but the water quality and low summer base flow limit the fish life.



No unique wildlife species or specialized wildlife habitat have been found on the site. Any important habitats will be preserved by protecting the stream valleys and main woodlands.

Past agricultural uses have practically eliminated the mature forests. Substantial woodlots do occur along the Nanticoke valley, the Catfish and along the Black Creek tributaries. The tableland west of the Nanticoke contains some large and nearly continuous woodlots running midway between the east-west concession roads. The area east of the Nanticoke Creek is sparsely wooded.

The woodlots on the site can be characterized as remnant hardwood stands. They are not of exceptional character, but can be improved through a woodlands management program.

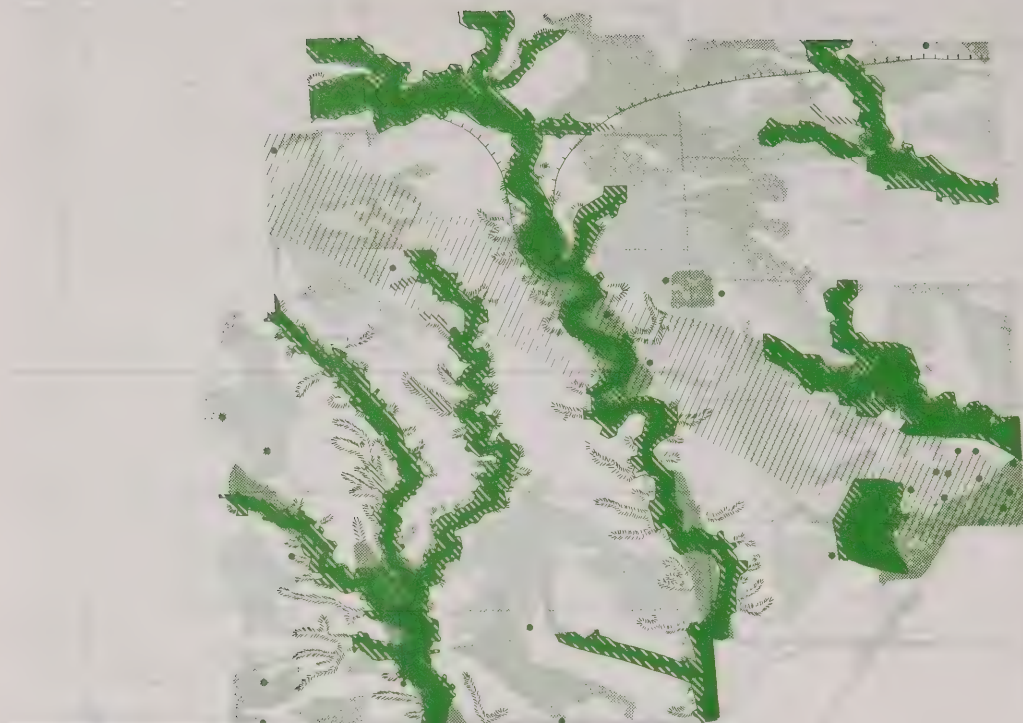
Residential development, if properly done, can be fitted into nearly half of all the woodlands without affecting the remaining woodlots and plantations. The remainder are unsuitable for any urban development without the risk of very high tree mortality. These woodlands can be utilized, however, as passive recreational lands, natural buffers between different land uses, and for hardwood production.

Ground Conditions

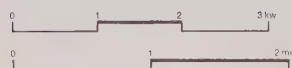
The land generally falls gently north to south. A large part of the site is virtually flat. The only marked changes in topography are along the stream courses.

The bedrock of limestone is exposed along some of the stream courses, and is within 5 m (17 ft) of the ground surface in many places outside the valley. The sedimentary overburden is predominantly clay, with some silt and sand in the western part of the site.

Surface ponding occurs whenever the heavy-textured clay soils are found on



Ground Conditions



Flood Plain



Fill Line



Shallow Overburden



Steep Slopes



Possible Solution Voids
in Bedrock



Gypsum Bearing Formation
(≤ 30 m from Surface)



Gas Wells



Poorly Drained Soil

: $\geq 75\%$ of Area



: 20-25% of Area

level or depressed land. While this is evident throughout the site it is most prevalent east of the Nanticoke.

The susceptibility of the creek valleys to flooding and the instability of the valley slopes are the major development constraints of the site.

A flood line has been defined, based upon the worst condition derived from two design criteria: either the regional storm as defined by "Hurricane Hazel" or the tropical storm with a return frequency of one in 100 years. The construction of any permanent building or structure within the flood line can be prohibited by the Long Point Conservation Authority.

A fill line also has been defined that incorporates slopes greater than 15%, natural vegetation adjacent to the flood line important for erosion control, and





wetlands and marshlands. Where no other factor applies, a setback of 15 m (50 ft) from the flood line was used. Development within the fill lines is possible, but the Authority has the power to prohibit or regulate any construction or placing of fill that will affect flooding, pollution, soil erosion, human safety and environmental conservation.

Gasfields occur near Jarvis and on the western edge of the site, while isolated gas wells are scattered throughout the site. The gasfields are largely depleted as a resource.

Solution voids in the limestone bedrock—sometimes 1.2 m (4 ft) across—have been found outside the site. These voids could lead to collapsed sinkholes in the bedrock. No evidence of voids has been found on the site: their area of highest probability occurs in a diagonal band across the middle. Conventional



Priority Areas for Agricultural Use





low rise building construction within the site should not be affected by any such voids, but bedrock conditions should be examined for structures to be founded on bedrock.

The gypsum-bearing salina formation under the northern area of the site is part of the only accessible and workable deposit known in Ontario. This deposit should be considered for future exploration.

Agricultural Uses

The site is predominantly in agricultural use, characterized by a wide diversity of farming operations throughout. Cash cropping as well as livestock production generally occur in the east. Dairying operations are carried out largely in the middle. Canning crops are localized in the northwest sector, as are the two most productive orchards. The tobacco growing farms of the region occur in the area further to the west of the site.

A large part of the area will remain in permanent agricultural production even after the development of the community for 100,000. After taking into account many factors—the soil capability, farm improvements and farm management—the areas most suitable overall for agricultural use were generally west of Townline Road and north of the 13th concession road. The area given lowest priority was the very southern portion of the site on both sides of the CN tracks, and in the area east of Townline Road.

Strategic Plan

4



Strategic Plan

4

The strategic plan sets out the main land-uses and infrastructure needed for the community at 100,000 population.

The plan includes these major features:

- an overall development envelope across the southern part of the project area and directly north of highway 3;
- housing areas for a broad mix of dwelling types;
- a rectangular grid of arterial roads;
- a linked open space system incorporating the main woodlots and valleylands of the site;
- a town centre located at the southern entry to the community;
- two potential industrial areas suitable for light industry and warehousing;
- four secondary centres, each planned for a high school, supermarket and a mixture of other associated facilities;
- servicing systems for sanitary drainage, water supply and storm water runoff;
- a transit system using buses to serve the entire built-up area.

Development Envelope

The community has been sited on the southern portion of the designated area roughly between the Sandusk Creek and the Black Creek and directly north of highway 3. The Nanticoke Creek forms a parkland spine running through the middle of the community.

The total development envelope encompasses 2,550 ha (6,300 a). Of this, about 240 ha (590 a) is major parkland and passive recreation lands accommodated in the valleys. The envelope also contains undesignated lands of about 300 ha (730 a) for flexibility.

In general, this area was selected because it is near the existing and proposed regional infrastructure, incorporates the main stream courses and other natural amenities of the site, and is close to the Nanticoke industrial area.

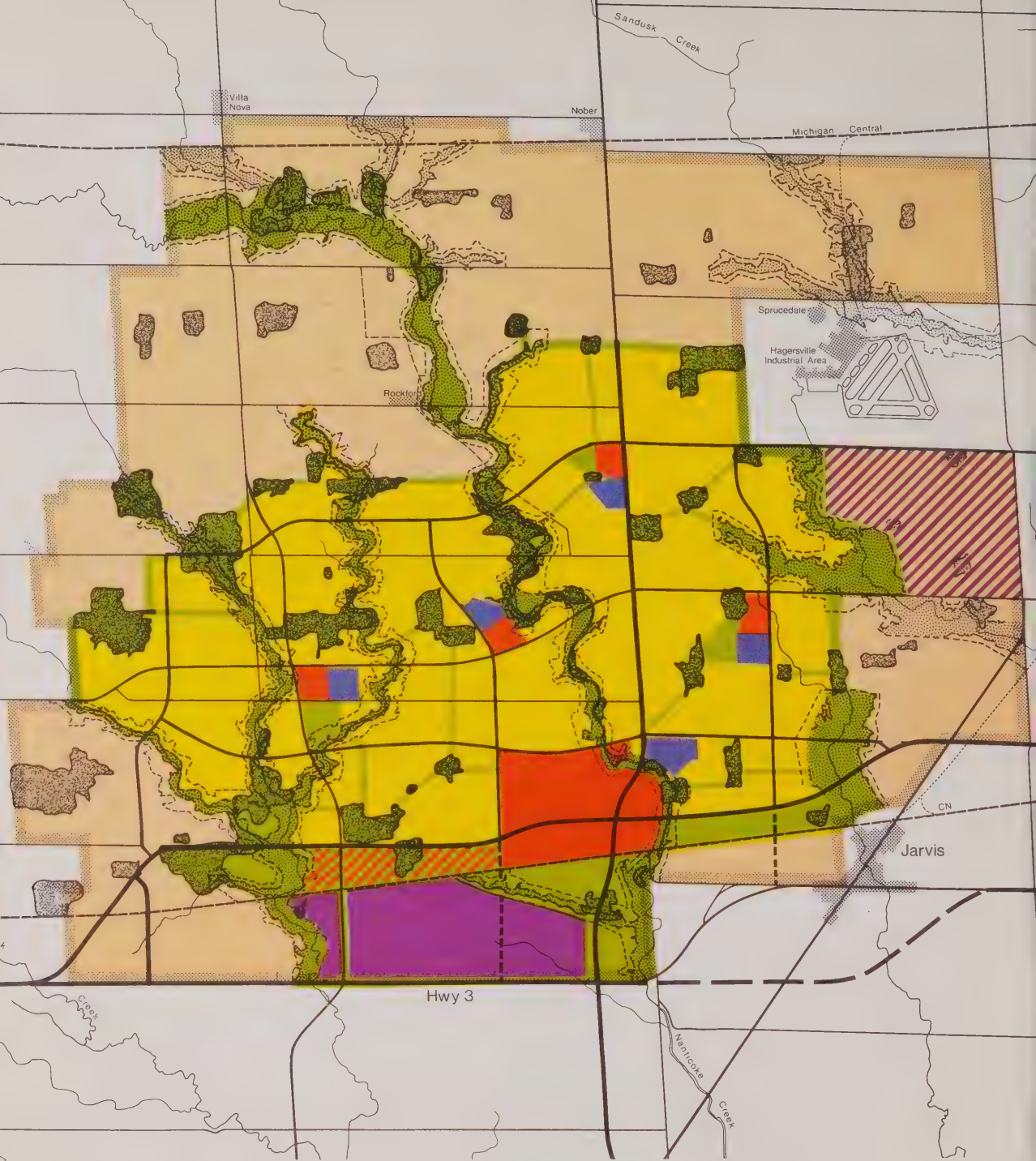
The north and western parts of the site—the best overall agricultural areas—have been retained in permanent farm use. These permanent agricultural areas are separated from the potential development area by open space buffers incorporating valleylands and major woodlots.

The eastern part of the site north of Jarvis has not been proposed for development for a number of reasons: the adverse drainage conditions, the extensive area within the flood plain and fill line of the Sandusk tributary, the shallow overburden and the gas wells.

Housing Area

Housing and associated uses account for the greater part of the development land contained in the strategic plan.

Most of the housing is expected to be family accommodation. The land



Strategic Plan 100 000 Population

- Housing Areas
- Mixed-Use Activity Centres
- Major Educational Uses
- Employment Areas
- Open Space
- Agricultural Uses
- Pedestrian Network
- Existing Development
- Regional Arterials
- Town Arterials
- Existing Roads
- Railways

25 HECTARES
25 ACRES

1KM
1MI

Date March
Scale 1:500

TOWNSEND
COMMUNITY DEVELOPMENT PROGRAM



allocated allows for a full variety of suitable dwelling types, ranging from single detached houses to clustered townhouses.

A small part of the housing—less than 10% of the total housing stock—is provided in higher density units. Although taller blocks can be expected at the densities assumed, most of this housing can be accommodated in four-storey apartments or maisonette units—that is, walk-up dwellings located over shops or other dwellings. In the plan, this housing is located mainly within or next to the town centre, generally overlooking the Nanticoke valley. The remainder has been provided in the secondary centres.

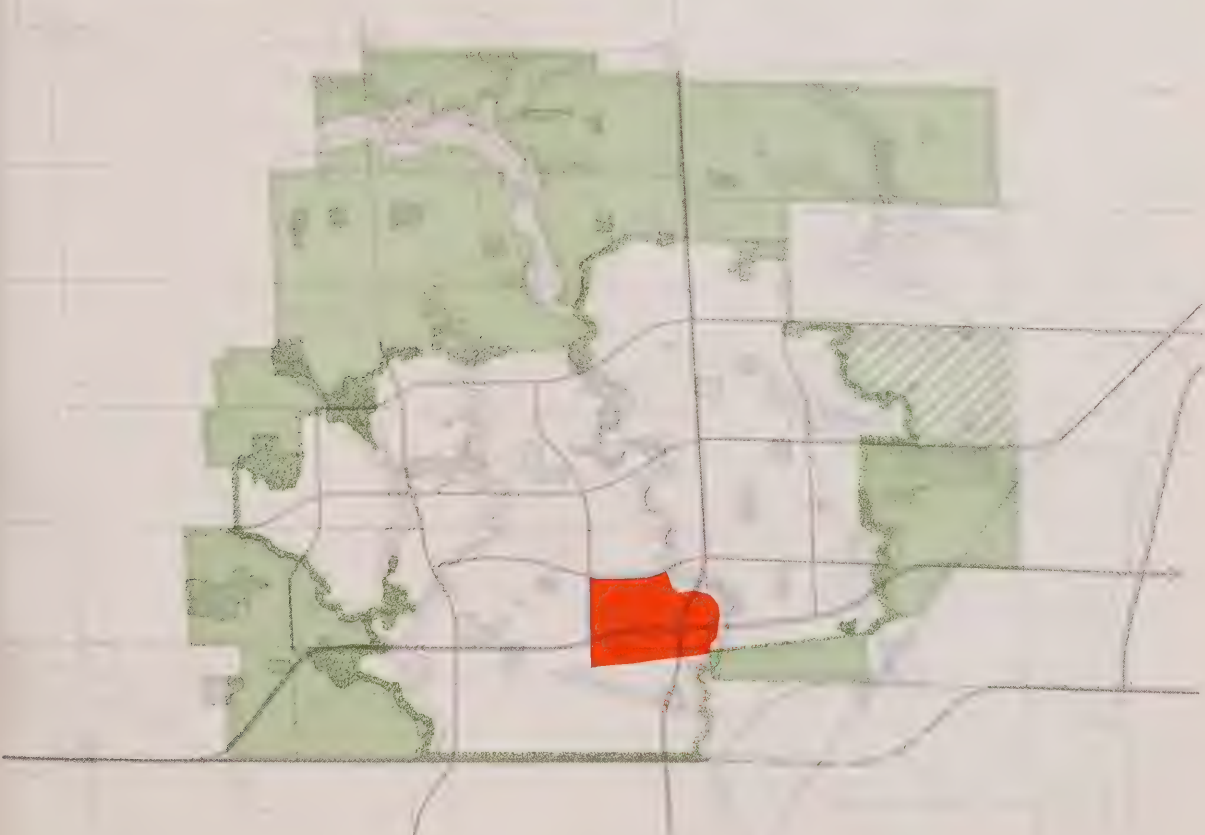
Using the same housing densities as those in the initial development area, the development envelope shown in the strategic plan can accommodate 100,000 people with a surplus in land of about 10%. This safety margin is needed to ensure that the plan can respond to different housing needs and unforeseen local development constraints.

Although they are not specifically shown in the strategic plan, the land allocated to housing also allows for elementary schools, neighbourhood parks and local activity centres. All of these facilities will be located as detailed designs are prepared for each housing area.

The public school system as presently planned has two levels: 600-pupil elementary schools for kindergarten to grade 8, and 1,200-pupil high schools for grades 9 to 13. The separate school system also has 600-pupil elementary schools for grades K to 8, but no separate intermediate or high schools are presently planned.



At the 100,000 population level, using current population projections and the planned school system, Townsend could contain this range of schools:

- 17 public elementary schools
- 7 separate elementary schools
- 6 public high schools.





The elementary schools should be distributed throughout the housing area so that every home is within a convenient walking distance. For the public elementary schools, the walking distance generally should not exceed 500 m (1,650 ft); for the fewer separate schools, the walking distance should be no more than 1,000 m (3,300 ft). They should be located near the main pedestrian routes, and alongside collector roads for those children travelling by bus. They also generally should be sited near the neighbourhood parks so that the play-space can be shared.

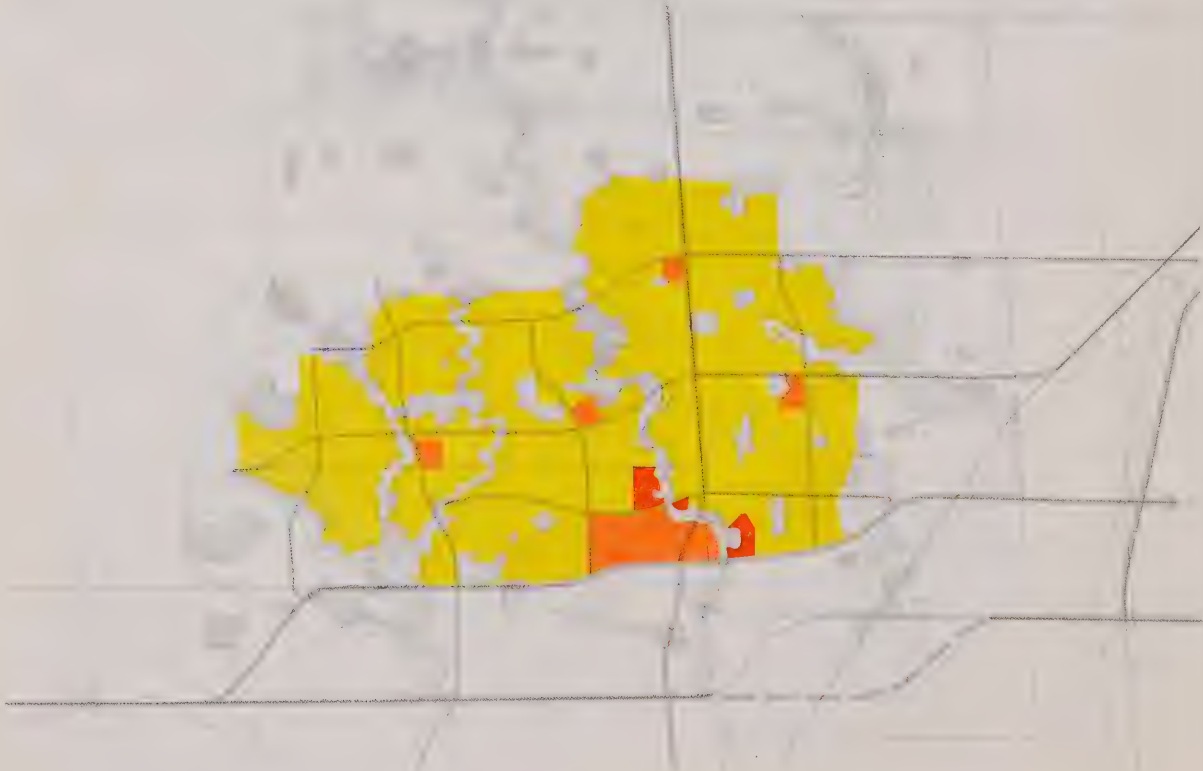
 *Low and Medium Density Area*
 *Higher Density Area*

0 1 2 3 km
 0 1 2 mi



Housing Area

Local centres also should be developed within the housing areas, at the collector roads and pedestrian routes, and adjoining in some cases the elementary schools. These local centres, which could eventually number 15 to 20, could contain a general store and a limited number of other convenience shops.





Road System

The arterial road system is a rectangular grid, adjusted to the topography and natural features of the site, and modified to reflect primary traffic movements. The arterials are spaced at approximately a 1 to 1½ km (.6 to .9 m) interval, with a tighter spacing around the town centre and a looser spacing in the peripheral housing areas.

The plan distinguishes between regional and town arterials. Two regional arterial roads are provided—one east-west road leading from highway 6 in the east to highway 3 in the southwest, and the second a north-south road following generally Townline Road north from highway 3. The roads are the principal access routes into the community and to the town centre. They have been designed as divided roads with a maximum capacity of six lanes near the town centre, and only four lanes elsewhere at full development.

The town arterials are primarily for internal traffic needs, providing access to the local facilities and housing areas. There are three east-west and four north-south arterials. These arterials have an allowance for four undivided lanes, but most of them are expected to require only two traffic lanes at ultimate development.

This framework of arterial roadways has considerable flexibility. The actual alignments of most of these roads still must be determined as part of the ongoing planning process. To respond to various circumstances, additional links also can be made south to highway 3.

The existing concession roads west of Townline Road generally have not been used for arterial roads in order to preserve the existing roadside trees and buildings and to retain the existing bridges for local use. These concession roads should be incorporated into the local road system.

Except for those in the first development area, the local roads within this arterial system have not been planned; these must be set out as development proceeds. Generally, access from the arterials should be provided by a limited number of collector roads, which will distribute traffic within each housing area, industrial area and the town centre.

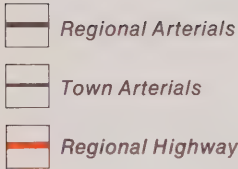
Traffic noise is increasingly being considered a nuisance. The noise along the major arterials in the long term could be higher than the acceptable levels as currently defined by the Ministry of Environment. However, noise from the highway and the railway is not expected to be a problem because of the intervening land and roadways.



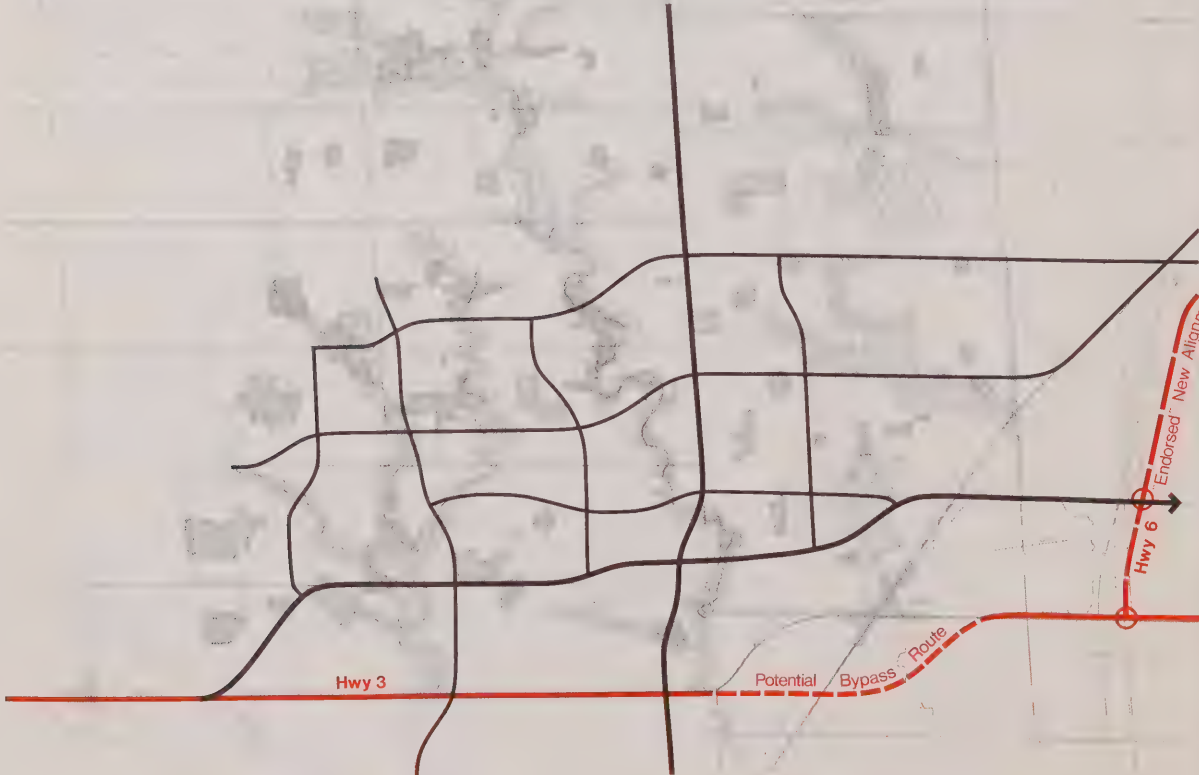
Possible methods for reducing traffic noise in outdoor spaces include providing wider than normal setbacks for buildings, creating barriers in the form of walls or earth berms, and siting buildings so that sensitive uses and areas are shielded from traffic noise.

To provide overall flexibility, the arterial rights-of-way established in the strategic plan have sufficient space for berms to reduce the noise levels to an acceptable level. Whether or not these berms are developed will be decided on a site by site basis, when detail designs are prepared for the neighbouring uses.

The rights-of-way set for the arterial roads also allow for roadside landscaping, to create a distinctive visual character and assist in reducing blowing snow. The town arterials also incorporate separate bicycleways.



Arterial Road System



Open Space

The open space in the plan has been designed to preserve the major natural features on the site, and at the same time, provide ample open areas for both active and passive recreation.

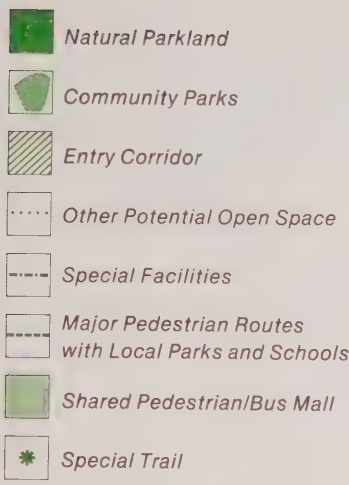
The major parkland of the community is contained within a town-wide linear system following the valleys of the Nanticoke, Black and Sandusk creeks. The Nanticoke valley, which passes through the centre of the community and alongside the town centre, is the spine of the system. These three creek systems provide natural corridors connecting the site southwards to the lake-shore, and in the case of the Nanticoke, northwards to the Waterford Conservation Area.

The valleys offer a variety of passive recreation opportunities: trails for walking, bicycling, horseback riding and cross-country skiing, and facilities for warm water fishing, tobogganning, skating and picnicking.

A wide east-west open space corridor also is proposed through the middle of the site, linking the valleys and providing a natural buffer between the urban and rural areas of the site. A number of woodlots and hedgerows can be reinforced with new planting to provide this natural corridor.

This major system should be supplemented by local parks and pedestrian/ bicycle paths in the residential areas and throughout the town. These smaller scale and local links should utilize where possible the existing drainage courses, which can be enhanced by landscaping and small ponds used for storm water retention. This open space system should provide a continuous network of footpaths and bicycleways, relatively free from vehicular traffic, linking all the main activity centres and the residential areas, and containing a range of parks from tot lots to extensive recreation areas.

A number of large community parks are planned to satisfy the intensive and active recreational needs of the population. One such park with approximately 10 ha (25 a) is provided in the plan for every 15-20,000 persons. These would be located within a ten-minute walk of everyone's house, adjoining secondary



Open Space





schools to supplement and share the recreational facilities.

The recreational facilities of these parks should be developed in response to the particular needs of the community. In general it is expected that they will be oriented toward adults and older children, and could include some of the following:

- a fastball baseball diamond, football and/or soccer field, 1/4 mile track and athletic fields;
- recreation hall and indoor pool;
- lawn bowling, tennis courts and court games area;
- gardens, picnic areas and general amenity space.

Neighbourhood parks of 2 to 3 ha (5 to 7 1/2 a) also are allowed for within the housing areas for every 4-5,000 people. These parks could include a range of recreational facilities, oriented primarily towards younger children, as follows:

- playgrounds;
- softball diamonds and soccer pitches;
- hard-surfaced multi-use areas for games;
- tennis courts;
- general gardens, sitting and picnic areas and wading pools.

These parks should be located on the local pedestrian system, and adjacent where possible to the local elementary schools, in order to allow for the dual use of the local open space.

Additional open space has been provided within the housing areas for walkways, tot lots and incidental amenity areas.

The small settlement of Rockford in the centre of the site represents an opportunity to create a special open space amenity. The former dam and mill-pond in the valley can be reconstructed. The cluster of historic buildings in the village can be improved. A number of compatible recreational facilities also could be provided, like a small native animal zoo, demonstration farm or a sugar bush plantation.

The hierarchical and linked open space system also provides a suitable framework for an integrated management program of wildlife and ground flora. The system creates a wide mixture of natural and man-made habitats that should encourage a diversity of native wildlife. It also provides a number of open space corridors for the movement of wildlife through the site.

When a more detailed program is developed, some of the open spaces should be designated as nature areas, where priority is given to maintaining the

natural habitat rather than public parkland. One possible wildlife preserve is a marsh within the potential floodlands of the upper reaches of the Nanticoke.


Tree nurseries should be established in the open space system to provide a continuous supply of trees and shrubs for landscaping. Many of the existing woodlots, if properly managed, could be used for commercial forestry.

Secondary Centres

Four secondary centres are provided in the plan. These are mixed-use service centres, providing for some of the major day-to-day needs of the 15-25,000 people living around them. The town centre is a fifth secondary centre serving its local population.

Each centre is expected to contain a variety of activities and services. For example, a typical centre might contain these facilities:

- a large supermarket with associated shops like a druggist, dry cleaner, barber, hairdresser, sub-post office, bakery, shoe repairer and other personal services;
- a public high school;
- community parks with indoor recreation facilities (perhaps a swimming pool, skating rink and/or gymnasium) and outdoor facilities (baseball fields, a football/soccer field and track, lawn bowling and tennis courts), and gardens and landscaped areas;
- apartments and special housing for the aged or other special groups;
- various community facilities such as a separate elementary school, a community health clinic, a day care facility and/or nursery school, a meeting hall and one or more churches.





Secondary Centre

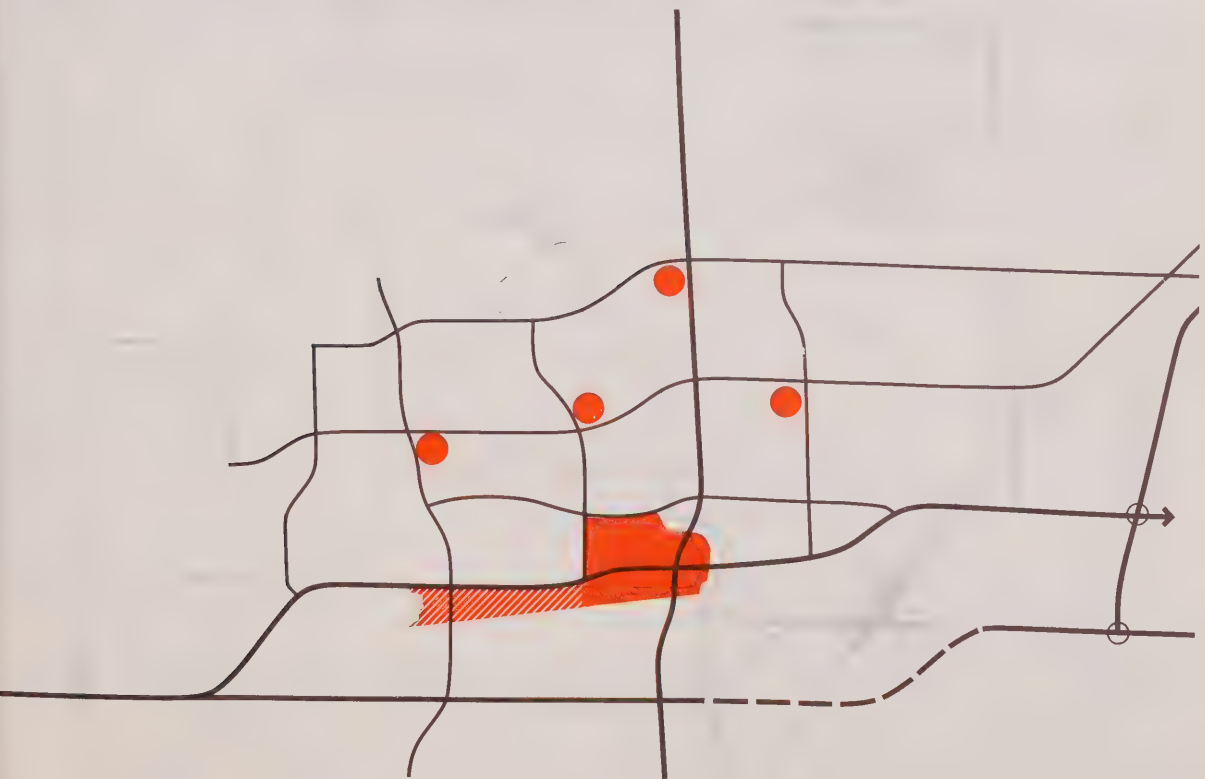
Town Centre

Potential Sites for Other Commercial Facilities



Secondary Centre Locations

Each centre can be expected to have its own character. Although a typical range of facilities has been listed, these should vary as new requirements emerge over time and the different local needs develop. Furthermore, each site has special characteristics that should be reflected in the design.





The first secondary centre is not expected until the town has grown to approximately 30,000 or more persons, and after the town centre is established as the dominant focus of the town and region.

All of these facilities are grouped together in order to create a compact, lively and car-free meeting area within convenient walking distance of most homes. The grouping should also produce economies in the provision of car parking, recreation areas and other community resources, because all of these facilities can be readily shared by different groups.

With this range of programs and facilities concentrated in one area, a focus also can be established for community activities like local residents groups, adult education, voluntary social organizations and other formal and informal events.

These facilities also should represent a significant source of local employment, which could amount to some 500 jobs.

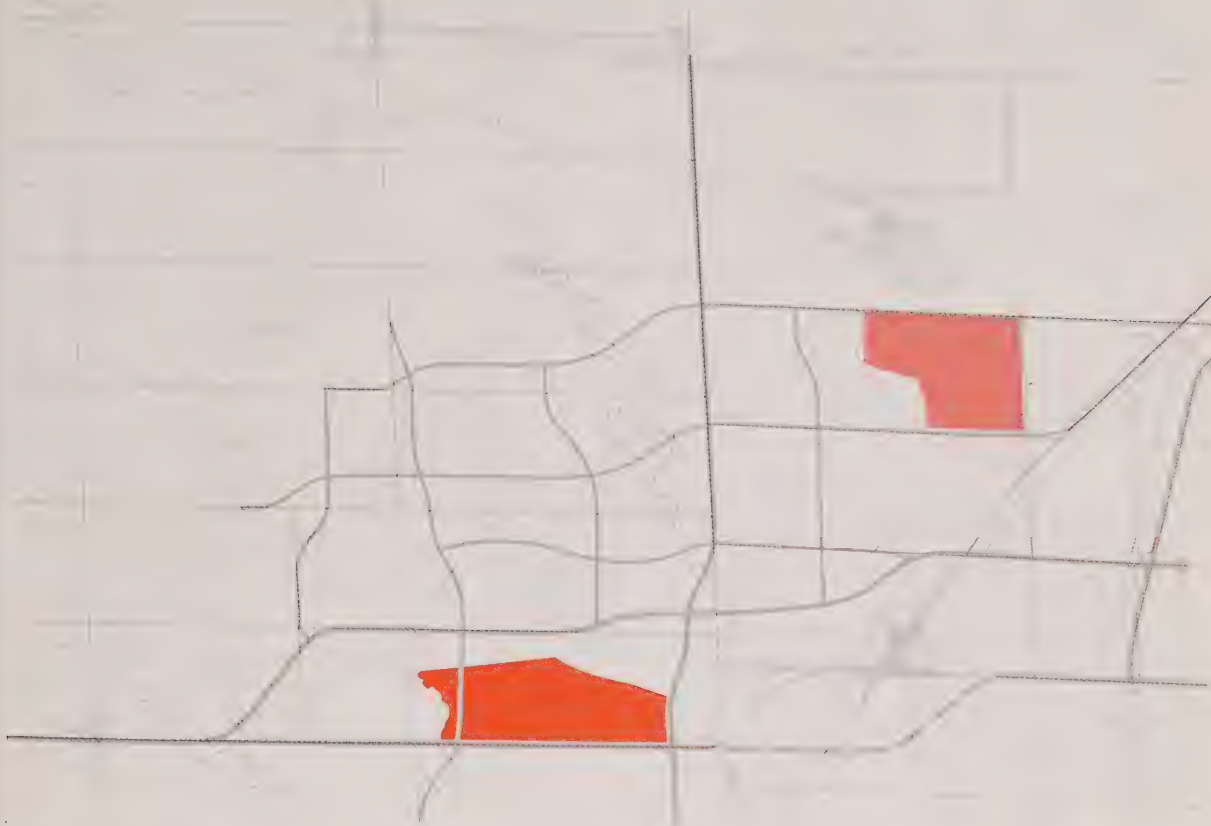
The secondary centres are located at arterial intersections for good car access. The local bus services are routed through them, perhaps on special bus-only lanes, to a central waiting and transfer area. They are also linked to the nearby housing areas by pedestrian bicycleways with grade-separated crossings under the adjacent arterials.

A typical secondary centre needs 25 ha (60 a). Recreation land—taking both the community park and high school—covers more than half this area. Another large space user is car parking, which requires as much as 6 ha (15 a) of land.

Employment Areas



The growth of the town will create employment in service industries and public institutions. These jobs will generally be concentrated in the town centre and secondary centres.

As the community grows, the available labour supply—particularly women—



Employment Areas



-  Early Employment Area
-  Potential Long-Term Employment Area



should also attract commercial and industrial firms to Townsend. These could include light industry, warehousing and highway-oriented establishments like building suppliers and automobile dealerships.

Two sites—each of about 200 ha (500 a)—have been designated for these uses. One lies between the two creeks along highway 3 below the CN railway on the southern edge of the site. The second is at the northeast corner of the urban envelope near highway 6 and south of the Hagersville industrial area. Rail spurs could be brought to some of these lands.

The second has been designated only for potential long-term use because the extent of the demand for this space cannot be determined at this time.

Depending upon the type of uses, each area can reasonably accommodate between 3,000 and 6,000 jobs.

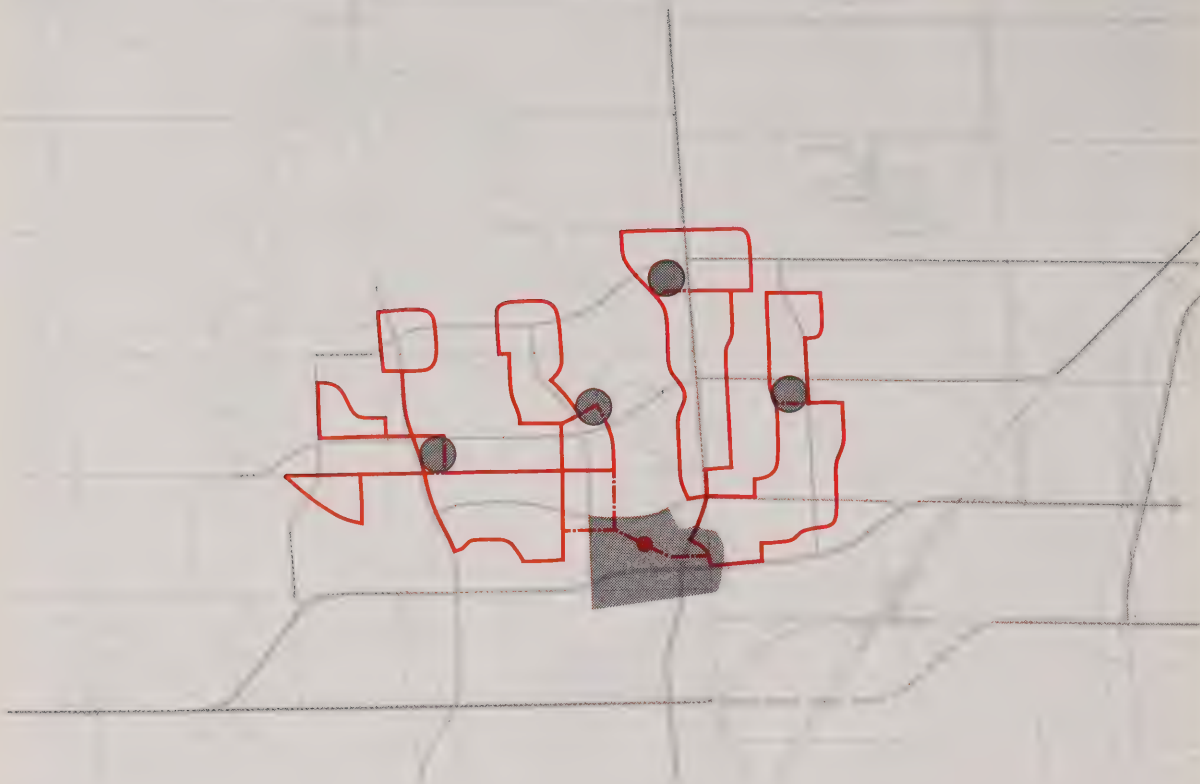
Small employment areas also can be accommodated within the urban area, if required, at selected locations along the arterials.

Public Transit

The public transit in Townsend has been planned as a public service, to provide an attractive means of travel for the many people without an alternative, and furthermore, to lessen the general reliance on car transport. At the same time, the planning has attempted to balance what the community might want with what it might be able to afford.






The transit system serves the entire built-up area using conventional buses on scheduled services operating on the normal roadways. A bus service can well accommodate anticipated flows. It can be initiated early and expanded as the town grows. Because the system shares road space with cars, capital costs are kept low, access to all uses can be provided, and routes readily altered as necessary.

The proposed routes are based on a radial network of services focused on the



Public Transit



-  *Bus Routes*
-  *Special Bus Lanes*
-  *Central Bus Station*
-  *Town Centre*
-  *Secondary Centres*

town centre. The town centre should have the largest concentration of services and jobs in the community. Therefore, it should be the most important destination for a variety of trips throughout the day. It should also have a transit passenger terminal, where transfers can be made between all local and regional services.

The preferred configuration for each radial route is a "figure-of-eight", each having two-way bus services, with the secondary centre in the middle and the town centre at one end. At the 100,000 population level, however, this double two-way loop cannot be used exclusively because the total travel distance is too long in some cases to meet operational requirements. In these cases, a single two-way loop between the town centre and the secondary centre is proposed, with a transfer required at the secondary centre to local services for the more peripheral housing areas.

The bus services are routed predominantly on the residential collector roads. Most residential activities, like local shops and elementary schools, are planned along these roads. In general, the routes are laid out to be as direct as possible, while providing a service within a maximum generally of 300 m (1,000 ft) of every home. High density housing generally should be within 200 m (650 ft) or less.

Although the residential collector system should be laid out to assist public transit, special bus-only links may be required in certain places within the housing areas to "short circuit" otherwise circuitous routes on normal roadways. Typically, these may require a short link between the heads of two cul-de-sacs, or short lengths alongside a pedestrian and bicycle path or arterial road.

Some form of preferential access for transit—like bus-only lanes or special turning privileges—may be required in areas of intensive activity like the town centre and the secondary centres. These should serve to increase not only operational speeds but also general accessibility by allowing the bus to penetrate to the centre of activity.

A central circulation spine is planned through the town centre. The spine is an open air route, shared primarily by pedestrians and buses, and passing by the main facilities in the centre. All internal services are routed along this spine; and hence, a bus might be expected every five minutes or less for quick trips within the centre. To gain access to this route, the buses might share the pedestrian and bicycle links from the neighbouring housing areas that pass under the arterials surrounding the centre.

Similar measures, although on a more limited scale, may be required also at the secondary centres. Separate bus lanes along the arterials have not been planned because the degree of congestion is not considered likely to significantly affect transit operations.

Regional bus services between Townsend, Simcoe and other major communities should increase as the population of town and region grows. In Townsend, these services should stop at the central bus terminal within the town centre. Access can be conveniently made to the town centre along one of the arterials directly from highway 3 and highway 6.

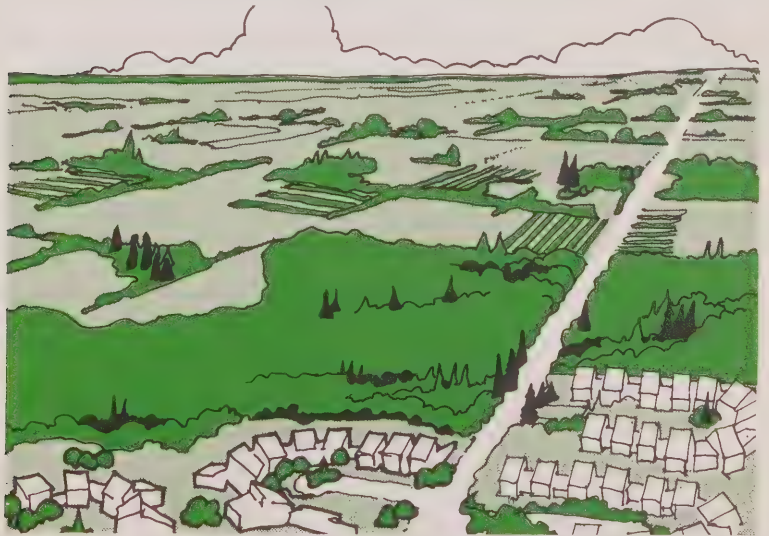
The provision of a transit service from Townsend to the industries at Nanticoke must be examined further. This service will be the responsibility of a new municipal or regional authority, and must be planned in conjunction with similar services from other communities.

This service must be particularly direct and convenient in order to attract ridership, considering the competitive advantages of the automobile. One possibility is an independent express service, linking only the town centre and secondary centres to the industrial areas, and depending on the local town services for collection within the housing areas. The industrial employees also may wish to organize their own services, for example, using small buses for which they share driving and upkeep.

Agricultural Area

A major influence determining the specific location of the town on the site was the agricultural production capabilities of the land. Since less than half of the site will be required for a community of 100,000, 2,800 ha (6,900 a) of the project area can remain in permanent agricultural use. An evaluation of soil quality, farmland use, and farm management helped to identify those areas of most value for long-term continuous farming.

Even within the potential development area most of the lands will not be developed for years. Meantime, farming can and should continue. To give farmers a measure of security and an indication of the length of time they can expect to operate the farm units, the development area can be divided into two zones: 1) medium-term agricultural areas covering the general area that





Agricultural Areas



-  Permanent Agricultural Area
-  Long-Term Agricultural Area
-  Medium-Term Agricultural Area
-  Initial Development Area

Sanitary Drainage System

will be required after the town has reached its initial population threshold of 5,000; and 2) longer-term agricultural areas needed after the town has grown to about 20,000. These indicative areas can be refined further as development proceeds.

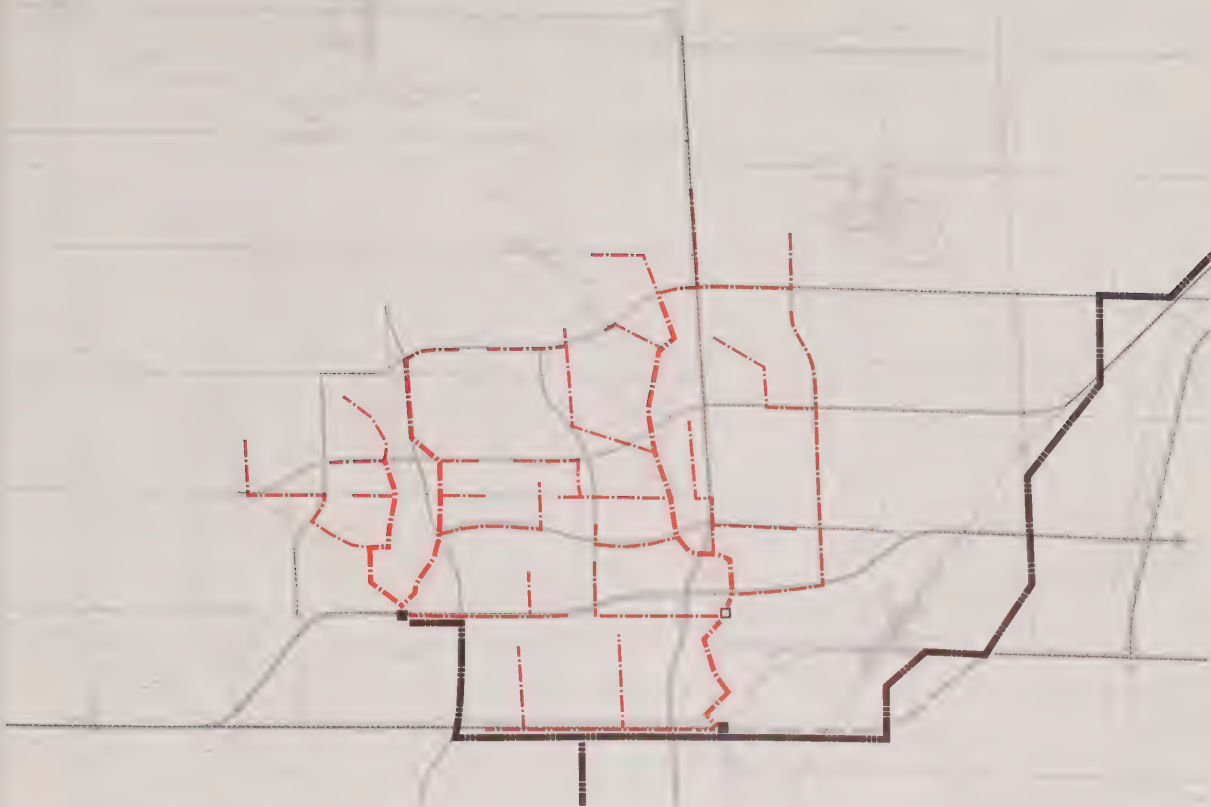
A flexible farm leasing and maintenance program has been prepared to relate the farm tenure and farm management arrangements to the town's growth stages. In this way, as much farmland as possible will be producing food, on both an interim and long-term basis, while at the same time allowing for the staged development of the new community.

The engineering services that are planned on a preliminary basis include sanitary drainage, storm water drainage and water supply.

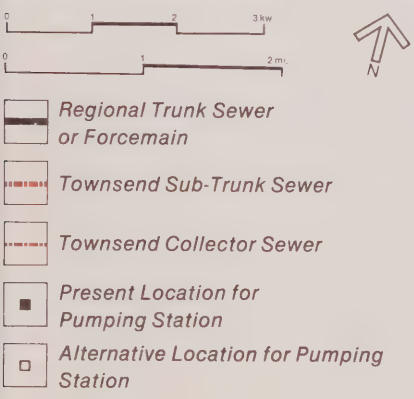
The initial development could be served by a temporary sewage stabilization pond, covering approximately 16 ha (40 a), situated between highway 3 and the CN rail line and between the two creeks. The central trunk sewer to the regional water control plant at Lake Erie will be located midway between the Nanticoke and Black Creeks up to the southern boundary of Townsend.

The preliminary sanitary system for the new community has been planned as a gravity system. It consists of three sub-systems based upon a sub-trunk in the Nanticoke valley and two in the Black Creek valley. The sub-trunks are placed within the creek valleys so that the entire system can take full advantage of the natural slope of the ground to drain the site with a minimum of excavation and pumping.

The Nanticoke sub-trunk serves the natural watershed of this creek, the developed area eastwards up to the Sandusk Creek and part of the area westwards in the Black Creek watershed. The Black Creek sub-trunks serve the remaining development within this watershed.



Sanitary Drainage System



The sub-trunks drain to the two pumping stations located near the southern end of the respective stream courses. These pumping stations are linked to the central trunk sewer by forcemains along roadways. The Nanticoke pumping station will also serve a trunk from Jarvis and Hagersville, and the Black Creek station a trunk from Waterford.

Each of the sub-trunks should be served by a series of collector and local sewers. The generally flat terrain provides considerable flexibility for laying out these sewers. Staging would have an important influence on their location. These sewers generally should follow roads and walkways.

The preliminary route for a single sub-trunk along the Nanticoke valley has been selected after careful examinations of the environmental features of the valley. The route avoids all major slopes and all significant woodlots and vegetation. The alignment does cross the creek in three places in order to avoid the major slopes and vegetation, but with the appropriate safeguards, these crossings can be made without permanent environmental damage.

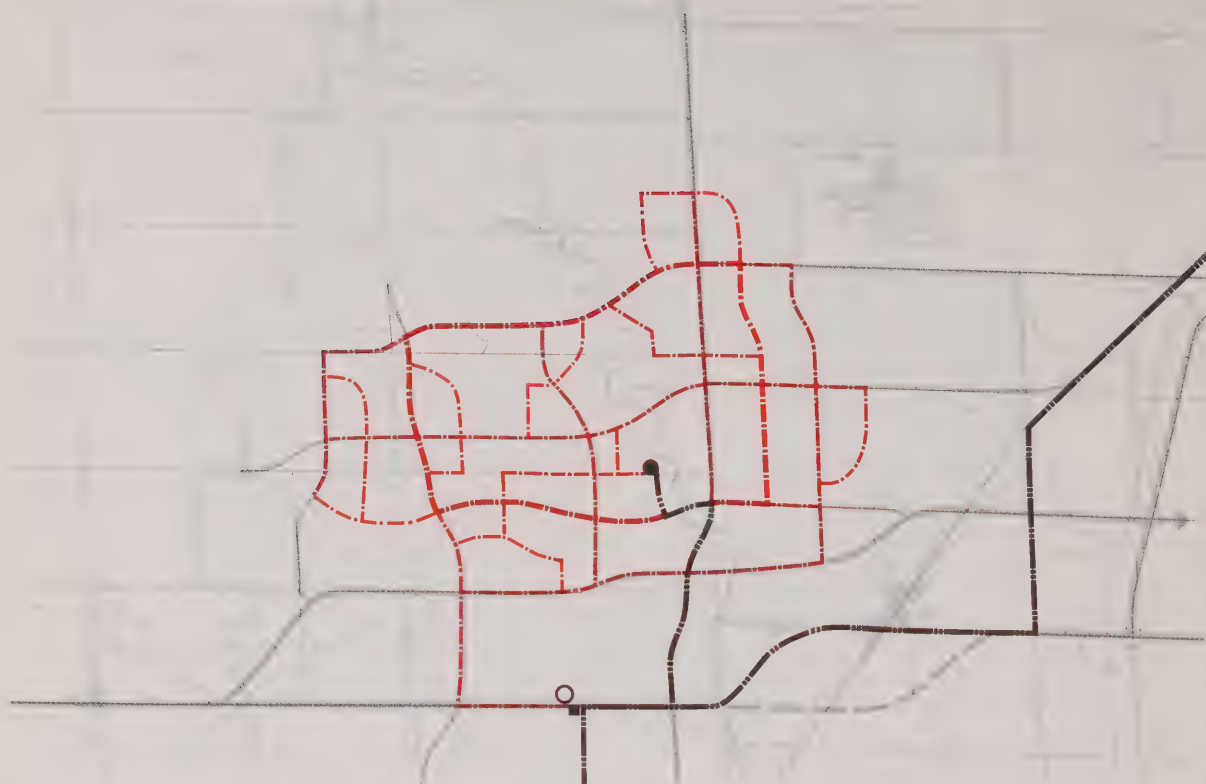
The route of this sewer, which should be suitably graded and landscaped, is used as part of the major pedestrian and bicycle system along the Nanticoke.

On the basis of this preliminary study, the single sub-trunk along the Nanticoke valley appears to have the least overall costs for serving this watershed.

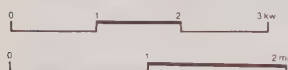
Pre-engineering design should consider these main alternatives:







- 1) Providing two sanitary sub-trunks along each side of the Nanticoke Creek, approximately paralleling the valley but routed through the development along streets and walkways;
- 2) Pumping along selected lengths of the sub-trunks or collectors.

The eastern half of the industrial area in the northeast corner of Townsend cannot be served by the Nanticoke sub-trunk without deeper excavations.



Water Supply System



-  Regional Trunk Main
-  Townsend Ring Main
-  Townsend Water Main
-  Elevated Tank
-  Pump Station
-  Ground Storage Reservoir

Therefore, provisions probably must be made for draining this area to the Hagersville trunk at the east boundary of Townsend.

The new regional water system, according to the current proposals, will supply Townsend by a new trunk main from the new treatment plant at Lake Erie. The main will be routed either along Townline Road, the central trunk sewer or the hydro corridor to the east. A ground storage reservoir with a booster pumping station will be required eventually in Townsend, either on the southern or eastern boundary, depending on the route.

The first stages of development at Townsend will be supplied directly from the treatment plant. An elevated tank, located west of the Nanticoke valley, will be constructed prior to first development in order to assure security of service during this period. The ground reservoir and pumping station will be provided later when required by demand.

In the preliminary layout for Townsend, the routing along the central trunk sewer has been used and the ground reservoir located in the southern industrial area. However, the other alternatives also can be accommodated.

The principal feature of the water network for the town is a central ring main supplied at two points from the ground reservoir. All of the major trunk mains are shown following the main road and walkway system.

Storm Water Drainage

The management of storm water by retention facilities has been adopted for the storm water drainage of Townsend. This approach is intended to control the runoff from the developed area so that the flow discharged to the natural watercourses does not substantially increase the rate of erosion or the frequency and magnitude of flooding downstream. The approach has been introduced recently in Ontario. The provincial requirements are presently in guideline form, and therefore, many aspects of this approach must be examined in greater detail.



Storm Water Drainage System



 Major Watercourse

 Storm Sewer

 Retention Facility

 Watershed Boundary for Piped System

 Watershed Boundary for Surface System

The storm system for Townsend consists of two parts: underground pipes and surface flood routes. The underground system has sewers for rapidly removing storm water runoff from frequent (up to once in two years) but relatively small storms. The surface system is designed to accommodate the storm flows resulting largely from a major storm of relatively infrequent occurrence (up to once in 100 years) using a series of designated routes along roads, walkways, linked open spaces and drainage easements.

The proposed piped system provides a separate sewer sub-system and retention pond for each of eight sub-drainage areas. When planned, the collector sewers should generally follow the arterial and major collector roads, while the local sewers should follow the local roads. Most of the developed area is drained toward the Nanticoke, including the developed area within the Sandusk, and the greater part of the area between the Nanticoke and the Black. The remainder is served by the Black Creek.

The surface runoff also is taken where possible to the eight retention facilities, but due to the natural gradient, some areas adjacent to the existing creeks are expected to drain directly to a natural watercourse. The designated channels must be laid out as development proceeds; the topography provides considerable flexibility.

The eight retention facilities have been planned as “wet” basins having permanent ponds 3 to 5 m deep (10 to 16 ft). The basins are located generally in the natural depressions formed by small tributaries at their outlets to the main stream courses. The storm water exceeding the design limit of the stream course is stored temporarily in the basin above the normal water level, and then discharged into the watercourse after the storm passes. With suitable landscaping and treatment these ponds can be made into landscaped and recreational amenities.

Additional supplementary “dry” basins may be required in local parks, and where the surface runoff drains directly to one of the watercourses.



Retention Pond

Special storage facilities must be provided in the industrial areas. These could include retaining water on roofs, car parks and landscaped areas. These should be supplemented by local "dry" retention basins.

Because of the susceptibility of Jarvis to flooding, the Sandusk watershed within the development area has been examined with particular care. The essentially flat terrain of this area does not provide sufficient gradient to create a piped drainage system with storage retention facilities. For this reason, housing development within the Sandusk watershed has been limited to the area that can be served by the piped system to the Nanticoke. Some surface runoff will still drain naturally toward the Sandusk. Shallow retention facilities may be required to control this runoff, perhaps in the form of low earth embankments in the floodplain of the creek.

The runoff from the industrial area in the northeast corner should be drained probably to the tributary of the Sandusk east of the site that does not pass through Jarvis.

Town Centre

5



Town Centre

5

Townsend's downtown has the opportunity to become the main commercial and social centre for both the new community and the region. It should contain most of the unique and one-of-a-kind facilities in the region, and therefore, provide the setting for the greatest diversity of goods, services, people and events in the area.

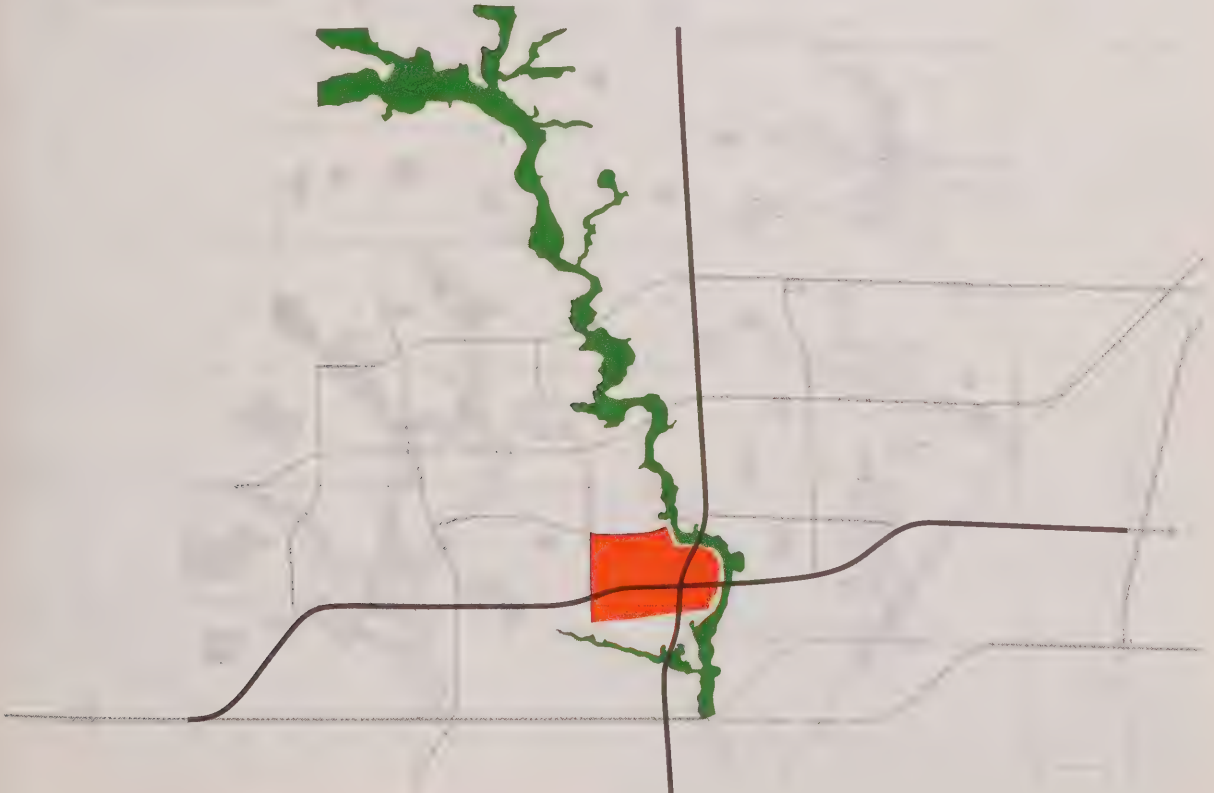
The concentration of activity is seen as a way of creating an early and strong sense of community identity. It should also create the best opportunity for establishing comprehensive comparison shopping in the region. This in turn should serve to attract a greater diversity of employment, and the provision of other social and non-commercial facilities.

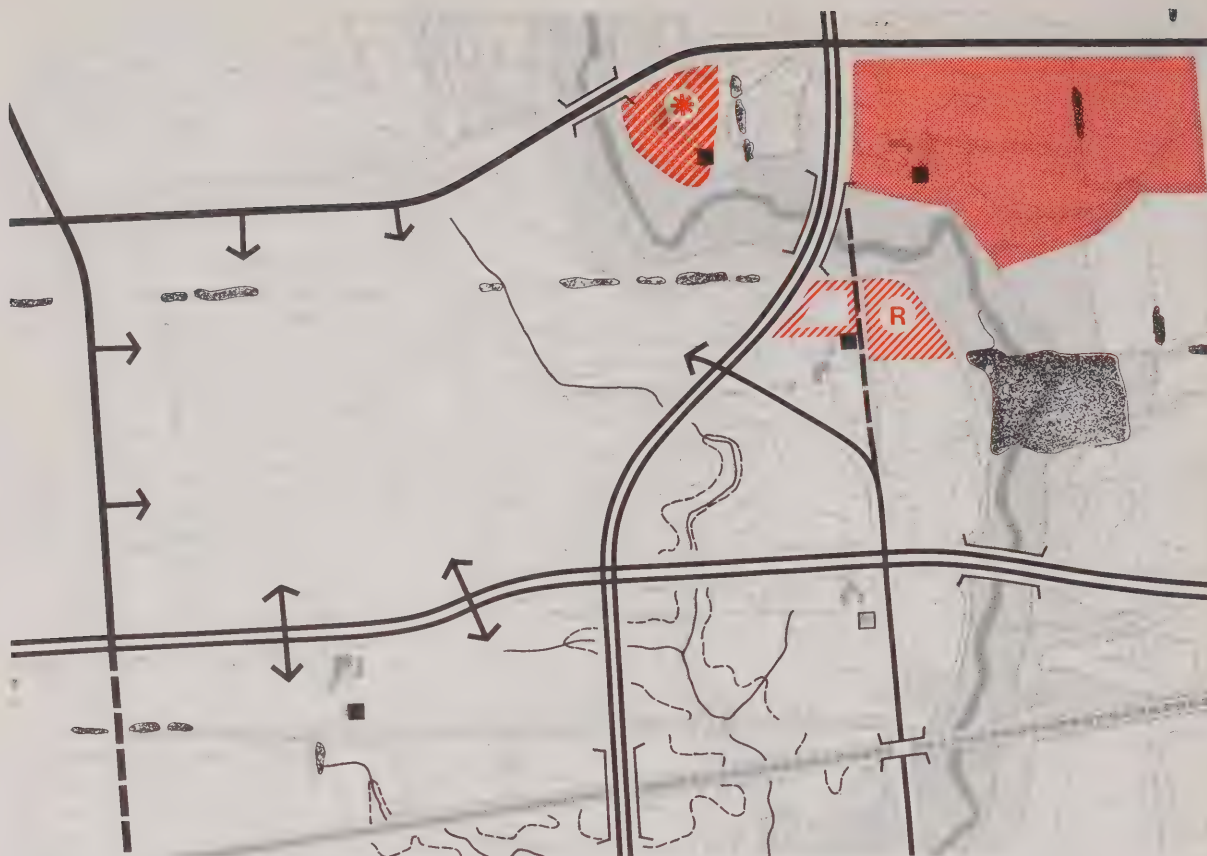
Site Conditions



Site Location for Town Centre

The centre is sited at the southern entrance to the community, next to the Nanticoke valley and approximately 1 km north of highway 3. The site is served by arterials on all sides to provide good car and bus access from the town and region. Pedestrians and bicyclists also can have ready access by using the Nanticoke valley and other grade-separated links to be provided from the surrounding housing areas.





Site Conditions for Town Centre



Floodplain



Fill Line



Woodlots and Hedgerows

Land Requirements

The site covers about 110 ha (270 a). Most of the area is relatively flat and featureless, which makes it suitable for large scale development. However, the Nanticoke valley along its edge provides a highly distinctive setting for many special developments. The valley itself forms part of the linear park system of the town.

The storm water pond that is needed at the southern part of the site and existing farm buildings provide other opportunities to create local areas of special character.

The centre should contain all the functions traditionally associated with major "downtown" shopping, entertainment, recreation, social and cultural facilities. With the associated build-up of service employment, it should be a major





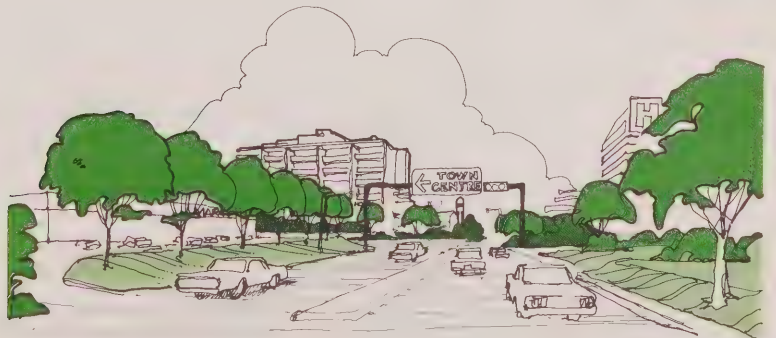
place of work in the region—second only to the Nanticoke industrial area. The variety of activities also should make it an interesting and unique place to live, especially for single people and young couples.

The types and sizes of buildings that may ultimately be in the town centre can not be fully predicted. However, in order to designate an appropriate area for the centre, an initial list of possible major land uses has been identified and their land requirements estimated. This has been based on what the population in Townsend and its hinterland could support, as well as the provision of facilities that are presently lacking in the region.

The area needed for the listed uses could require more land than is available in the site, if the uses were built at a low density. However, an intensive and “urbane” character has been assumed for Townsend’s centre, with buildings fronting on streets, some mixing and stacking of uses and sharing of car parking spaces. On this basis, the land budget required for the listed uses amounts to nearly 100 ha (250 a). The land requirements will increase as more uses become known.

The main facilities at the 100,000 population level include the following:

- comparison shopping facilities with about 100,000 m² (1,000,000 ft²) of floor-space for three or four department stores and associated specialty shops, supermarkets, restaurants and service establishments;
- 3,000 apartments or units located over shops and offices for about 6,000 residents;
- office space, including a regional administration centre, new municipal





- offices, registry office, police headquarters, post office, social and health services, and small businesses;
- commercial and community facilities, including hotels, cinemas, a theatre, art gallery, hospital and a library;
- leisure uses, including a civic square, indoor all-year sports centre, stadium and sports fields;
- car parking for approximately 10,000 vehicles;
- central bus depot for local and regional services.

Although outside the area formally defined as the town centre, the community college and the first local centre are also functionally part of downtown. The local centre, with its favourable access and siting, has the potential of becoming an extension of the town centre for special shopping, office and restaurant uses.

Land-Use Pattern

The centre has been planned as a mixed-use development. This approach is intended to create a downtown that is lively and exciting, as well as economically viable, through all stages of development.

The land-use pattern is organized around four broad activity zones, each containing a mixture of compatible uses needing the same major locational characteristics. Some of these zones overlap and extend into adjacent development areas.

- 1) *The valley edge* along the Nanticoke could include high density housing, hotel, leisure facilities, cafes and prestige office developments—many of these in campuses with generous landscaping and open space related to the valley.
- 2) *The housing area* between downtown and adjacent neighbourhoods on the north and west could be a quiet and low-scale environment with a mixture of housing, small squares and urban spaces, local shops, professional offices, small work shops, and studio and cultural facilities.
- 3) *The commercial core* at the centre of the site—the area having the highest degree of access and greatest intensity of use—could contain the major public attractions that thrive in close proximity to one another like shopping, restaurants, entertainment.
- 4) *The highway campus* associated with the regional roads could have the land-extensive uses—many requiring their own parking facilities and not dependent on busy street life and casual trade—such as car dealers, building suppliers, sports fields and stadia, institutional complexes, service industries and showrooms.



Activity Zones

Land Use Budget for Town Centre

Description	5,000 Population Total Floorspace (m ²)	Site Area (ha)	20,000 Population Total Floorspace (m ²)	Site Area (ha)	100,000 Population Total Floorspace (m ²)	Site Area (ha)
1. Shopping						
Department stores	—	—	7,000	0.5	45,000	2.0
Other shops and services, restaurants, specialty foods, liquor/beer/wine	—	—	12,750	1.0	43,500	2.5
Supermarkets	—	—	3,250	0.5	6,500	0.75
TOTAL	—	—	23,000	2.0	95,000	5.25
(parking)	—	—	—	5.0	—	7.0
2. Offices and Other Commercial						
Regional administration	2,800	1.0	4,650	2.0	6,500	2.0
Municipal, provincial and federal government	1,000	0.25	10,600	0.25	18,400	0.5
Professional offices and businesses	—	—	11,400	0.25	18,400	0.5
Hotels and related facilities	1,000	0.25	8,000	0.25	14,800	0.5
Cinemas and entertainment	—	—	1,500	0.10	3,000	0.25
TOTAL	4,800	1.5	36,150	2.85	61,100	3.75
(parking)	—	1.0	—	6.0	—	6.5
3. Housing						
@ 75 dwellings/ha with structured parking and community open space	—	1.0 (75 du)	—	8.0 (600 du)	—	40.0 (3,000 du)
4. Community Facilities						
Art gallery, theatre, library, museum	—	—	3,000	0.5	13,000	1.0
Health clinic, hospital	1,000	0.25	3,400	0.5	14,000	1.0
Recreation centre, day care	—	—	1,000	0.25	2,000	0.5
High school	—	—	—	—	13,500	5.5
Churches, social and other facilities	700	0.25	2,000	0.25	5,000	0.5
TOTAL	1,700	0.5	9,400	1.5	47,500	8.5
(parking)	—	0.25	—	1.3	—	3.0
5. Open Space						
Sports fields including parking	—	—	—	—	—	8.0
Parks and plazas	—	—	—	2.0	—	4.0
TOTAL	—	—	—	2.0	—	12.0
6. Circulation Infrastructure						
Distributor and access roads	—	0.75	—	4.0	—	9.0
Pedestrian/transit/bicycle routes	—	0.25	—	2.0	—	4.5
TOTAL	—	1.0	—	6.0	—	13.5
TOTAL		5.25		34.65		99.50



Through traffic can bypass the centre on the surrounding arterials. For local traffic, a limited number of access points lead to the distributor roads for the town centre. The main distributor is a loop around the commercial core giving access to the main parking areas, service areas and local roads. These will be supplemented by a network of local roads providing access to buildings and small car parks.

The downtown will be the focus for all local bus routes and the stopping point for regional transit services.

The local buses have been routed down the linear spine through the middle of the town centre to a central bus terminal. The main transit route will be in an open-air arcaded mall for pedestrians and buses, fronted on both sides by the main shops and other facilities.

-  Arterial Roads
-  Distributor Roads
-  Potential Grade-Separated Intersections
-  Parking Areas
-  Bus Routes
-  Major Pedestrian Routes
-  Secondary Pedestrian Routes



Circulation Framework





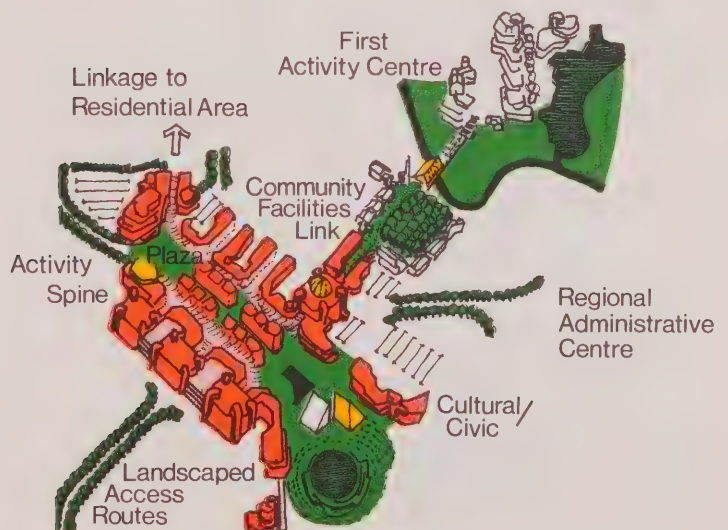
The pedestrian system has been treated as a primary movement framework in the town centre. The main pedestrian routes, which all lead to the central mall, are independent of the distributor road system. They will link all the important uses within the town centre and to the adjoining housing areas. While the routes within the centre will be generally at ground level, convenient grade-separated links to adjoining areas have been indicated.

These main pedestrian routes will be supplemented by a tighter network of secondary links, generally following sidewalks along the local streets.

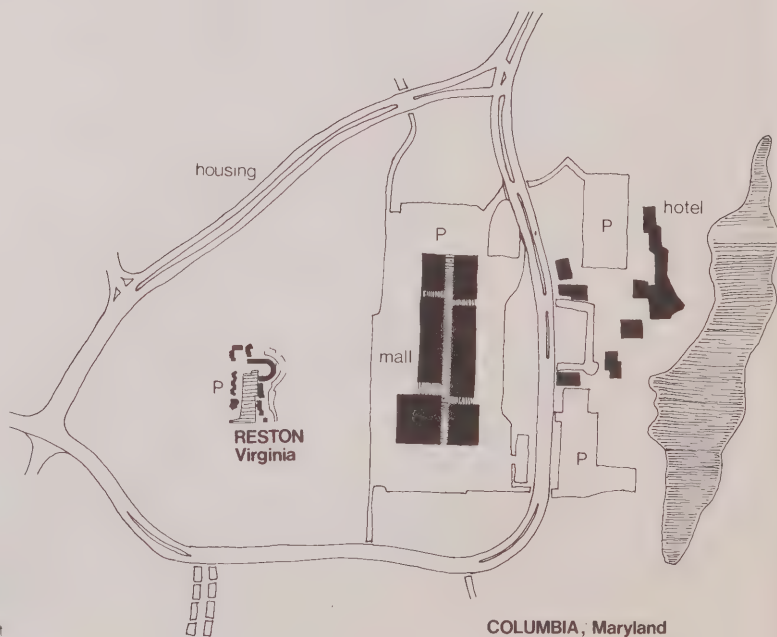
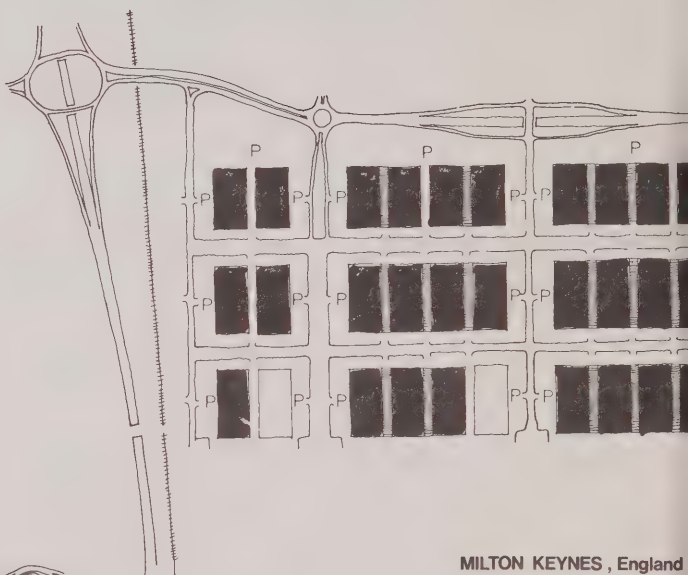
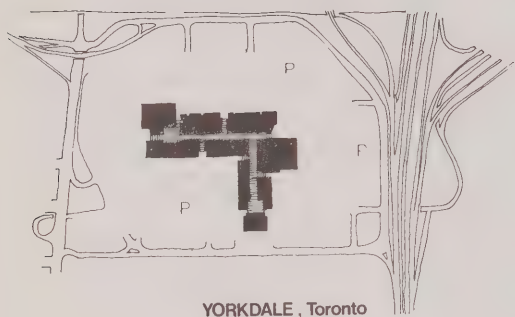
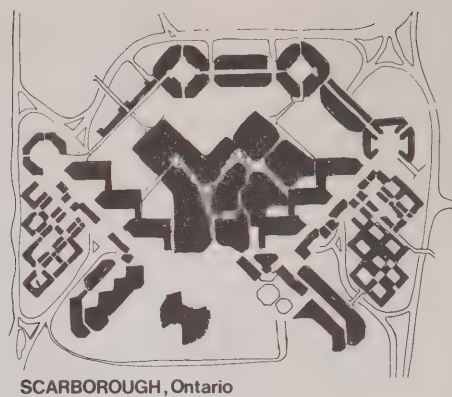
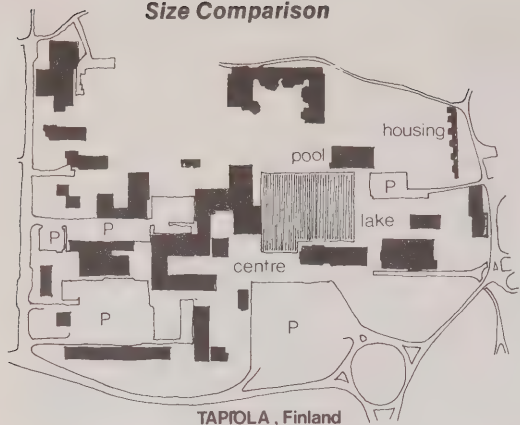
This system allows for creating a variety of pedestrian places: climate-controlled malls, arcaded passages and open air streets and squares. Intersections in the system should be treated as focal points with landscaped sitting areas and public squares. Continuous arcades should be provided along open routes to protect pedestrians and to separate pedestrian-scaled activities from the vehicular traffic.

The major car parks have been located directly off the distributor road system, near all of the facilities concentrated along the main activity space. In this way, the parking provision can be kept to a minimum by encouraging multi-use throughout the day. These lots are a size that can be compatibly integrated with the associated pedestrian-scaled development and still allow for future structuring into decks. Other small linear car parks for short-term parking will be located also along the local streets.

Commercial Spine



Size Comparison





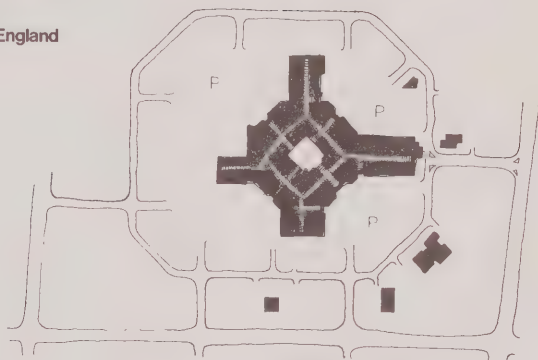
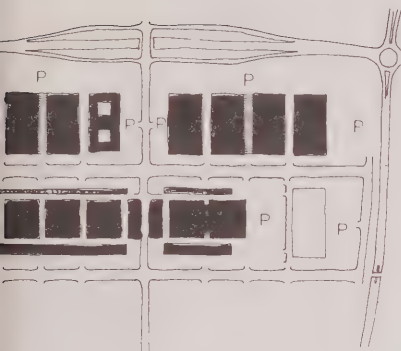
HARLOW, England



STEVENAGE, England



SIMCOE, Ontario

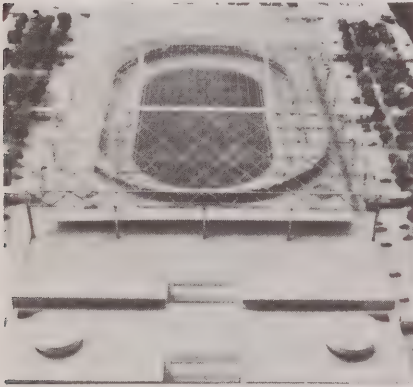
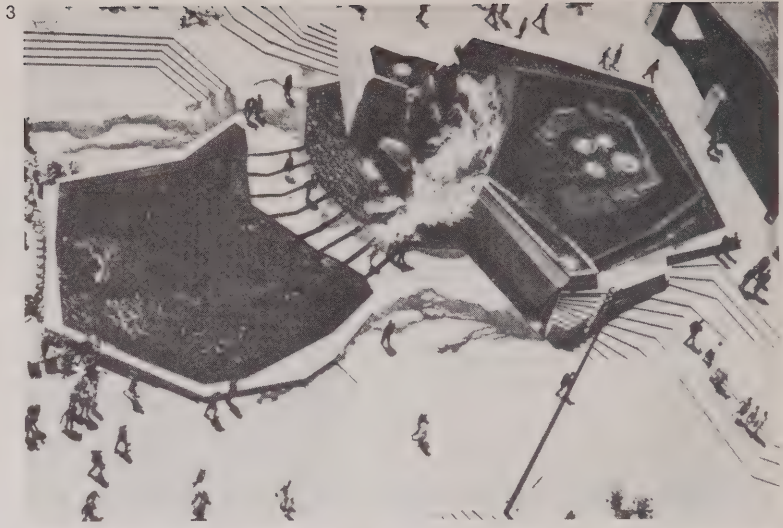


SQUARE 1, Mississauga



Architectural Images

- 1 Town Centre, Tapiola, Finland
- 2 Stadium, Milton Keynes, U.K.
- 3 City Square, Portland, Oregon, U.S.A.
- 4 Covered Shopping Mall, Houston, Texas, U.S.A.
- 5 Housing Over Shops, Reston, Virginia, U.S.A.
- 6 Civic Square, Toronto, Canada
- 7 Recreation Centre, Milton Keynes, U.K.



- 8 Housing, Thamesmead, U.K.
- 9 Park, Cambridge, U.S.A.
- 10 York Square, Toronto, Canada
- 11 City Square with Bell Tower, Philadelphia, U.S.A.



Design Potential

The preliminary planning for the town centre does not predetermine the appearance and shape of the buildings. However, certain arrangements of buildings and spaces are suggested by the planning concepts.

To illustrate the potential physical character of the town centre, examples of developments elsewhere have been placed in the Townsend setting. These developments are intended to represent forms and layouts that could be achieved in particular parts of the centre.

The roads leading to the town centre have been treated as visual gateways. The first views into the centre, especially from the intersection of Townline Road and the southern arterial, are intended to present an inviting image and provide a clear sense of orientation to the major components and internal circulation system of the town centre.

The focus of this urban structure is a central spine running through the middle of the commercial core. This reflects the traditional "main street" of down-towns in southern Ontario, but here it is designed primarily for pedestrians and buses only. Public squares along the shopping spine located at convenient intervals for the pedestrian create spaces for special developments and activities, such as a theatre and civic square.

The commercial core along both sides of the central spine should be the area of most intensive and diverse use. The street frontages should be continuous, unbroken by either vehicular traffic or car parking. The associated car parking in the long-term probably will be stacked, in order to provide adequate provision within reasonable walking distance. Generally, the area should be characterized by busy streets, attractive frontages, bright lights and closely spaced activities.

 Major Commercial and Community Facilities

 Main Parking Areas

 Housing Areas and Local Facilities

 Open Potential



Design Potential

Outside the core, the development is concentrated along a number of fingers extending out to the surrounding areas. These fingers of development are intended to ensure that the surrounding areas are not physically isolated from the centre, as is often the case in major centres because of the road-





works and parking areas. One of these connects the initial activity centre north of the Nanticoke to the core.

Housing in the town centre can take a variety of forms: linear apartments along the walkway into the commercial core, terraces overlooking the Nanticoke, townhouses around urban squares and maisonettes over shops.

Phasing Considerations

The town centre will take many years to reach the richness and complexity illustrated. What is needed, therefore, is a general framework that can accommodate growth over time, and function effectively at every stage of development.

To allow for orderly growth the town centre site is laid out in a grid block pattern. The grid squares, which define individual development parcels, vary in size according to the potential uses and their access requirements.

This pattern allows for growth similar to the historic development process of streets and building plots, while also retaining the advantages of continuous street frontages and protected pedestrian routes. Because each parcel can form by itself a complete and economic unit, development can take place incrementally according to the rate of the town's growth and market, and the availability of resources. This should lead to a choice of sites and layouts at each stage of growth, and encourage investment from small as well as large developers.

At the 5,000 population level, a local activity centre is planned directly north of the town centre. Although it will serve primarily a neighbourhood function in the early years, given its attractive site and good access, the centre has the potential of eventually becoming an extension of the town centre for specialty shopping or entertainment.

Development in the town centre at this time probably will be limited—perhaps the initial stage of the regional administrative centre, a health care facility, a small hotel, some municipal offices, and about 100 apartment units shown clustered along the realigned Townline Road south of the Nanticoke.

By the 20,000 population level, the area should be an identifiable multi-use centre. Townsend, together with the surrounding area, could support the initial stage of a department store, a major supermarket, drug store and associated shopping. Other development could include additional apartment units, an expanded regional administrative centre, other professional and government offices, a community health centre, indoor recreation centre, and various social and other services.



The shopping and community facilities could be developed in a climate-controlled mall, located to the west of Townline Road and served by at-grade parking areas. The diagonal road paralleling the Nanticoke probably will be developed by this time to serve the town centre and the housing areas to the northwest and along the valley. A comprehensive pedestrian and bicycle system is also planned between various parts of the central area and the surrounding town.

By the time Townsend reaches 30-40,000 population, the town centre should have the character of an intensive, lively and diversified downtown. With the provision of a full department store, the first multi-level commercial space could be developed and the other specialty shops and facilities considerably expanded. These in turn should assist in attracting a wide range of other commercial, cultural and recreational facilities, and employment opportunities.

In general, the town centre should be developed from the northeast to the southwest to be always contiguous to the associated housing area, and also to provide expansion space for additional uses. Any extra land to the southwest can be developed for housing to complete the town centre.

First Development Area

6



First Development Area

6

The plan for the first stage of the town's development includes housing with schools, shopping and parkland for about 5,000 persons. Sites are also defined for institutions wishing to start building in the first years.

In addition, a draft subdivision plan has been prepared for the first 900 housing units, together with a comprehensive design for 200 of these units as an illustrative example.

Site Conditions

The site for the first development area is attractive and gently rolling, bounded on the west by the slopes of the Nanticoke valley and on the east by a wood-lot and hedgerows.

Direct access to the site is provided from highway 3 by Townline Road and from highway 6 by an east-west concession road. This portion of Townline Road probably will be realigned, and the east-west road improved, prior to first construction. This L-shaped route could be designated regional road 69.

Housing Market

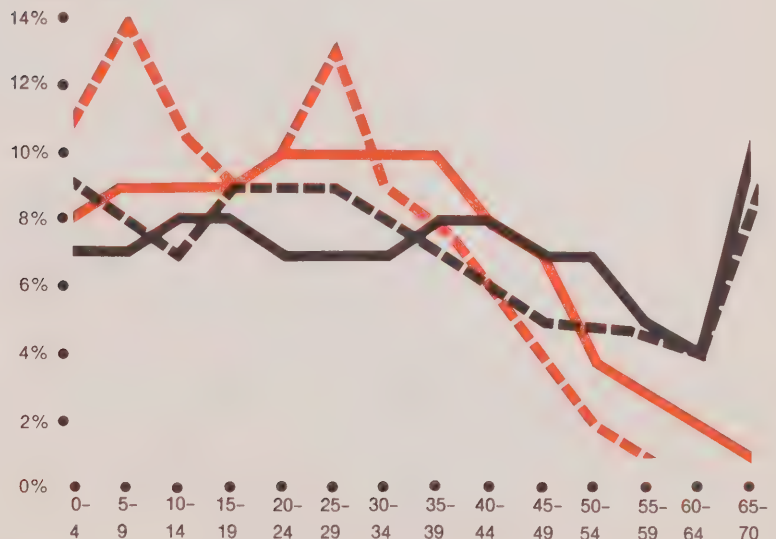
The housing needs for the first few years are based upon these projected population characteristics:

- The early Townsend residents are expected to be relatively young. Over 70% of the heads of households first moving to Townsend will be between the ages of 25 and 44.
- Most of the households moving to Townsend will have young children. The natural rate of increase is not expected to be high. The average number of persons per household is expected to be about 3.55 at the 5,000 population level.

Age Profile

Source PBA based on
TEIGA projections

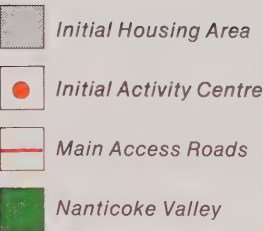
- Ontario (1981)
- Ontario (2001)
- Townsend (5,000 pop.)
- Townsend (80,000 pop.)



**Housing Mix
for Initial Development Area**

Type	Number	%
Detached Houses	420	30
Semi-detached houses	410	29
Rowhouses	460	33
Apartments	110	8
Total	1,400	100

Intermediate Development Area



Location for Initial Development Area

—Most of the households will have modest incomes based upon single wage earners because early work opportunities for women are expected to be limited. The average household income will be slightly under \$15,000 per year; nearly half of the household heads will earn \$10-15,000 (1975 constant dollars) annually.

These incomes and household characteristics indicate a need for about 1,400 dwellings for the first 5,000 persons, a preference for family housing (ground-related 3 to 4 bedroom houses), economy in housing prices, and a limited market for apartments.

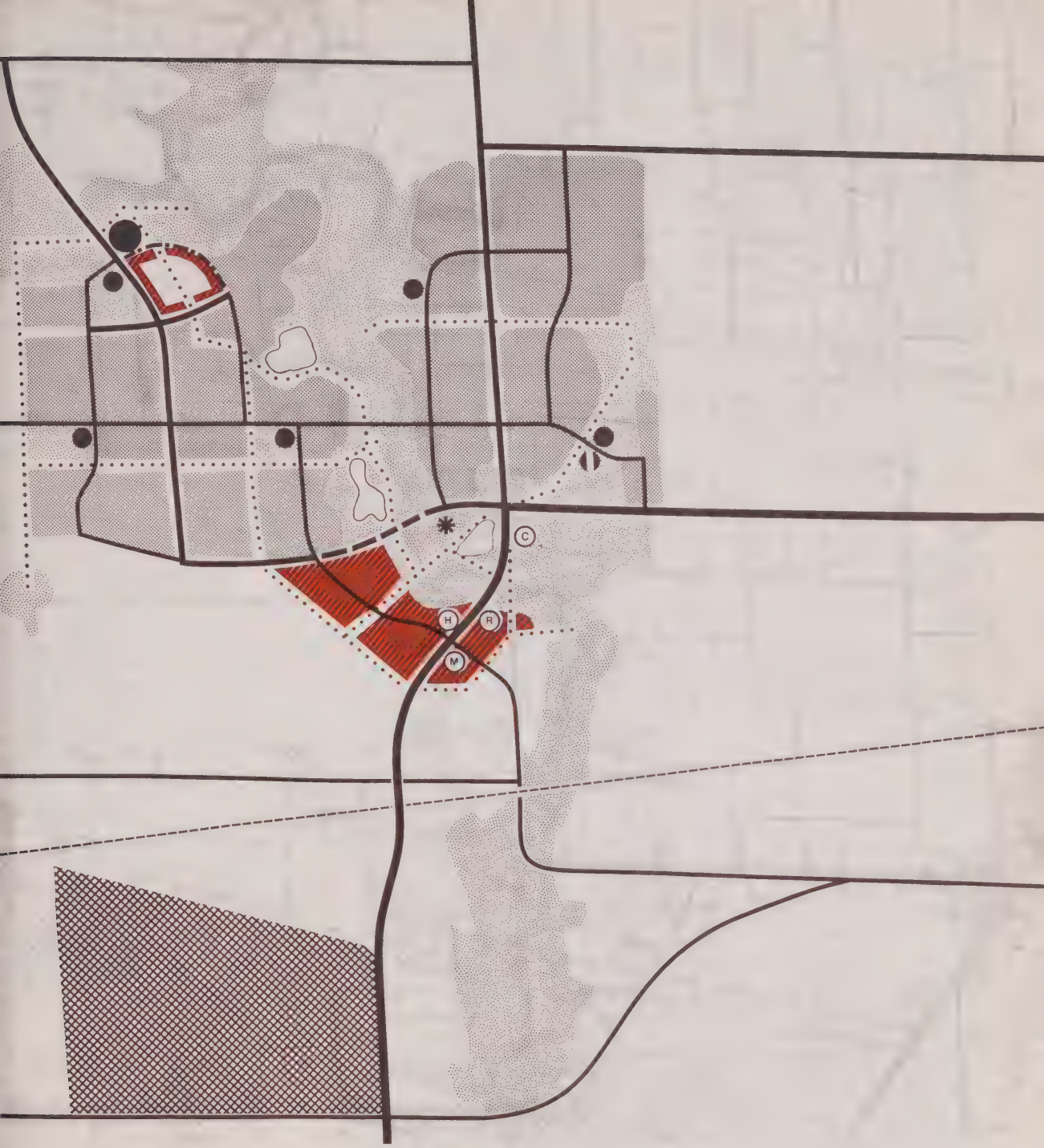
A sketch intermediate plan for the community at the 20,000 population level has been prepared to provide a planning context for the first stage of 5,000. It indicates a possible next stage of growth, and therefore, how the roads, schools and other features of this more detailed plan might relate to the surrounding area.

The 20,000 population threshold, using current population projections, represents at the shortest a ten-year development period. Development over this period will be affected by many factors, and as a consequence, the location and layout of the development can be only tentatively planned.

This intermediate plan focuses the development on the Nanticoke valley, and locates most of the housing within a short walking distance of the main natural amenity of the site. It also places the housing near the town centre, while providing this important area with expansion space for long-term growth. Finally, it offers a variety of development parcels—near the centre, along the valley and on the tableland—that can respond to different development needs.

The family housing areas with their associated schools, parks and other facilities, are located on both sides of the Nanticoke valley. The housing areas are defined on the east by a major woodlot and associated hedgerows and on the west by the outer limit of the drainage area for the Nanticoke sewer





Intermediate Plan 10,000 Population

Housing Area
 Commercial and Social Facilities
 Open Space
 Industrial Area
 Arterial Roads
 Collector Roads
 Pedestrian Path
 Pond

-  Initial Activity Centre
-  Public High School
-  Public Elementary School
-  Separate Elementary School
-  Community College
-  Regional Administrative Centre
-  Hotel
-  Health Facility

 300M
 1000 FT



Date Apr. 77
 Scale 1:20000

TOWNSEND
 COMMUNITY DEVELOPMENT PROGRAM



Ministry
 of Housing
 Ontario

\$10,000 or less

\$10,000 - 14,999

\$15,000 - 19,999

\$20,000 or More

0 10 20 30 40

% of all Households

**Projected Household Income
at 5000 Population (1981)**

system. The higher density housing, mainly for single people and small families, is provided in and near the town centre along the Nanticoke valley.

The main commercial and community facilities are concentrated in the town centre off the diagonal distributor to the west of Townline Road. The town could support a large supermarket plus convenience shopping and personal services. With the additional support population from the wider region, the first stage of a department store also might be viable with the associated comparison and specialty shopping.

The sites for the community college and the regional administrative centre are indicated. Other facilities in the town centre could include an indoor recreation facility, various churches and additional private and public office space.

The town will need a public high school by this time. It can be located in the first stage of the initial secondary centre, or with the community college.

Any industrial development can be accommodated in the area to the south of the town along highway 3.

The first stages of the arterial road system should be established by this time. The construction of the new bridge crossing north of the town centre will depend upon the degree of central area activity.

The internal bus service should be operational; it will probably follow two loops running on the collector roads on each side of the Nanticoke, and linked at the town centre.

The entire development area will be served by the Nanticoke sanitary sub-trunk and its associated collector system.

Three retention facilities for storm water will be required along the Nanticoke: two for the housing areas on each side of the valley and the third for the town centre. The industrial area will require separate provision.

Water supply probably will come directly from the regional purification plant, with the water tower providing limited on-site storage to overcome any temporary stoppage.

Initial Development Plan

The distribution of the various land-uses was influenced by the housing and community needs, by development phasing considerations, and by the natural characteristics of the site. It results in an arrangement which should be practical to implement and attractive to the incoming population.



Housing Areas

The initial housing area is laid out in a compact neighbourhood centred on Townline Road, within a short walk of the Nanticoke valley in the west and the first local centre to the south.

The land allocated for housing is based upon relatively modest lots. For example, the single detached houses are typically allowed 12-15 x 30 m (40-50 x 100 ft) lots, and semi-detached or link houses on 9-10½ x 30 m (30-35 x 100 ft) lots. The street townhouses or rowhouses have 6½-9 x 30 m (22-30 x 100 ft) lots.

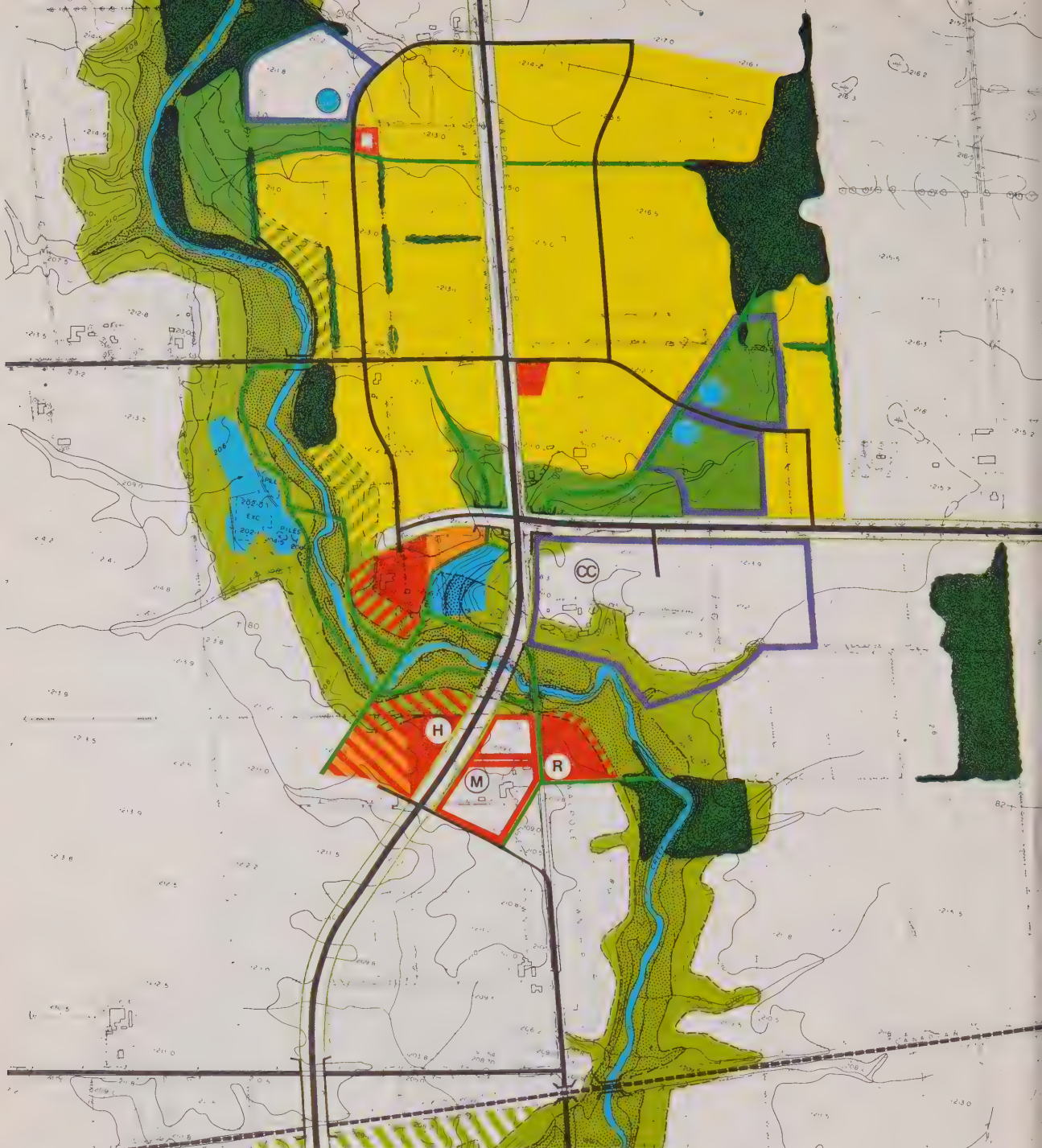
The net residential density, inclusive of housing and residential roads, is about 26 dw/ha, (10 dw/a). The neighbourhood density, when schools and other local open space are included, is about 20 dw/ha (8 dw/a).

The first stage will need two elementary schools for grades K to 8: a full 600-pupil public school, and a "starter" 300-pupil separate school. A second public school site also has been shown, as another public starter school is needed when the population approaches 6,000 persons.

Both "starter" schools should be eventually expanded to full schools, and therefore, are allocated full sites.

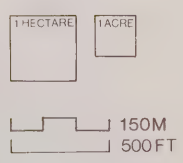
The apartment units needed at this time are located in the first local centre and south of the Nanticoke Creek in the town centre. This upper density housing, which is based upon 75 dw/ha net (30 dw/a), can be accommodated in three-storey apartments or stacked maisonettes over shops and offices.





Detailed Plan 5000 Population

- | | |
|-------------------------------------|--------------------------------|
| Housing Areas: Low & Medium Density | Public Elementary School |
| Higher Density | Separate Elementary School |
| Commercial & Institutional Uses | Community College |
| Natural Open Space | Regional Administrative Centre |
| Local Parks | Health Facility |
| Woodlots & Hedgerows | Hotel |
| Arterials | Ponds |
| Collectors | Pedestrian Path |
| Railway | Bridges & Underpasses |



Date Mar
Scale 1:1

TOWNSHIP
COMMUNITY DEVELOPMENT PROGRAM



Initial Activity Centre

The commercial and community facilities needed to serve the essential needs of the early residents are located in an early activity centre. The centre has been located on a particularly suitable and strategic site—immediately south of the first housing development, at the intersection of the two initial access roads, and overlooking the Nanticoke valley. Coupled with the regional administrative centre, they should serve to create an early focus for the community and a starting point for the town centre.

The facilities that are tentatively earmarked for this area are these:

- a “super” jug milk store for groceries, drugs and miscellaneous other goods;
- shops for a dry cleaner, barbershop/hairdresser, restaurant and an LCBO/Brewers Retail outlet;
- offices for a doctor, dentist and perhaps a lawyer and real estate agent;
- a marketing centre that could be used also as a public meeting area;
- a site office for the development agency.

Adjacent to the local centre is the first retention pond for the storm water system. The 2 ha (5 a) pond has been designed as a visual and recreation amenity, for uses like skating in the winter and boating in the summer.

The site also contains a number of existing features that have been incorporated into the plan for the local centre or associated open space. The historic “Anderson” farmhouse, one of the oldest farmsteads in Townsend, is an excellent example of an “Ontario or Regency cottage” farmhouse. A small cemetery situated on a knoll adjacent to Townline Road contains a number of tombstones dating back to the 1840’s. The barn, which is a typical timber structure on a stone base, has a prominent silo and with suitable renovation can provide a large indoor space.

Initial Centre and Retention Pond
Scale 1:3000



Open Space

The open space system has been designed to create from the outset a special image for Townsend. The first part of the linear park planned along the Nanticoke valley should be landscaped during the first years as a major attraction in the community.

The quarry site within the valley also should be reclaimed to provide a 21/2 ha (6 a) pond suitable for boating, fishing and skating, a tobogganing hill and general parkland.

Within the residential area to the east of Townline Road, the local parkland and schools are located along a diagonal open space corridor linking the woodlot in the northeast to the local centre and valley in the southwest. A smaller corridor also links the area to the west to the centre. Along both corridors a pedestrian way with underpasses at the arterials is provided.

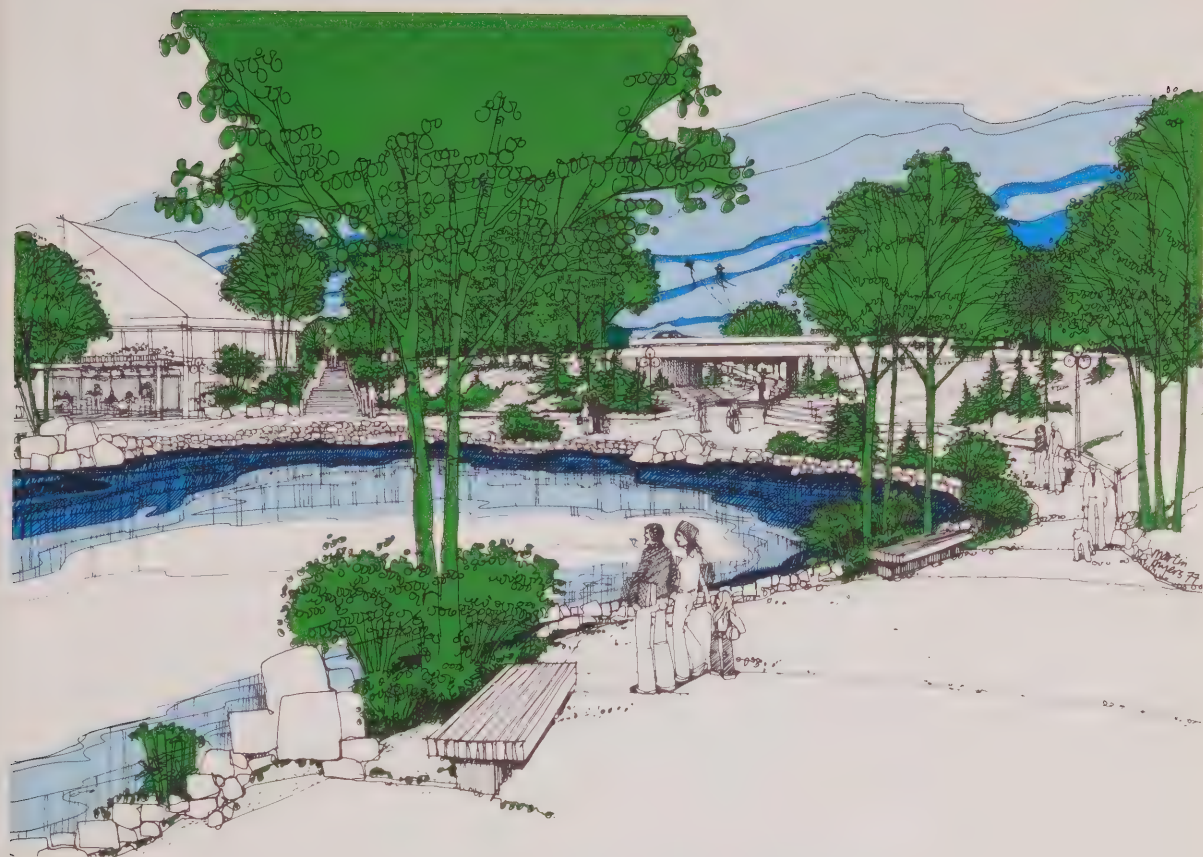
This pedestrian system is extended across the Nanticoke on the existing bridge to the regional administrative centre. This bridge will be no longer used for traffic when the new crossing is made. A pedestrian way is planned for the northern crossing of Townline Road when this length of the road is improved.

Other Facilities

Within the area of the town centre, sites have been indicated for a number of early facilities: the regional administrative centre, a health care centre, a small hotel and an apartment development. All of these are clustered along the southern edge of the Nanticoke valley near the new crossing for Townline Road.

Quarry Pond
Scale 1:3000





Directly north of the Nanticoke, the first stage of the community college is scheduled for development by this time.

The new regional water supply system will be operational prior to the initial development at Townsend.

The initial development area will be served by the first phase of the permanent sub-trunk gravity sewer running along the Nanticoke Creek north of the CN rail line. Effluent from this sewer could be pumped via a forcemain south to the new regional trunk sewer. Alternatively, the effluent could be pumped to a temporary stabilization pond.

The regional trunk water main northwards from highway 3 passes west of the Nanticoke valley along new and proposed road rights-of-way to a 45 m (150 ft) high elevated tank, required to provide pressure control and storage.

The first retention pond next to the local centre should be developed prior to first development to temporarily store the increased runoff from the developed area, before discharging it into the Nanticoke after the storm passes.

The telephone and hydro service can be extended to early development from Jarvis, and then upgraded with on-site facilities as needed.

Subdivision Plan

Single	249
Semi-detached	90
Link	128
Townhouse	202
Quadruplex	88
Multiple Family	95
Apartment	40
	<u>892</u>

In order to prepare for early development on the site, a draft subdivision plan has been prepared for formal submission to the regulatory planning agencies. This plan defines lots for approximately 900 houses, and sites for the other facilities expected in the initial years of Townsend.

The housing mix provided in the subdivision plan, which has been based upon the marketing considerations noted at the beginning of this section, includes the outlined range of units.

Special lots are provided for one-storey single-aspect dwellings along the arterials, as a means of satisfying the recommended provincial noise standards. Lots for quadruplex units are shown abutting the woodlot in the northwest corner, and along the eastern part of the site in order to save a major hedgerow. Sites for multiple housing—clustered townhouses suitable for rental or condominiums—are located near the schools, public open space and local centre. The apartments are located within the local centre.

Access to the housing lots generally is provided by a series of loops, P-loops and cul-de-sacs off a central collector road. The collector is linked to the adjoining regional roads in these plans—the northernmost of these is a temporary link that will be removed in later stages of growth.

Through the housing area, a diagonal open space is created incorporating the woodlot in the northeast corner, the two elementary schools and associated playgrounds and a “dry” storm water retention area in the southwest corner. A pedestrian path planned along this open space system links via under-passes to the local activity centre.

Draft Subdivision Plan
Scale 1:6000



Nanticoke Valley Housing Area

Also defined in the subdivision plan is a mixed housing area along the Nanticoke valley. This area was planned in greater detail than is customary in a conventional subdivision plan. In this case, a comprehensive design was prepared for the entire residential environment. Not only were the roads and lots laid out, but the potential buildings and spaces were also considered.

To achieve a distinctive residential development while also providing houses for the modest incomes of the early residents, the plan has been based upon a proposed set of urban planning standards. Essentially, these standards allow tighter roadways, more modest lots, and smaller setbacks including zero lot line development. As a trade-off, however, they also provide more public open space for children's playspace and general amenity.

The plan provides for a total of 209 family houses:

- 45 single detached houses
- 34 semi-detached houses
- 70 street townhouses
- 60 clustered townhouses

The clustered townhouses are located along the edge of the Nanticoke, with direct access and views of this major amenity. These units, which have shared parking, are planned for rental but are also suitable for condominiums.

The majority of the units—all of which have been planned for ownership—are grouped along five short cul-de-sacs on the eastern part of the site. The townhouses have been linked at the end of the cul-de-sacs to form a crescent. These units will also have direct access to the public open space behind them.

The drainage swale that passes north-south through the eastern part of the site has been retained as the focus for the local open space. It has been designed with a variety of spaces along its length—heavily planted areas, open grassed areas for casual children's play, and a tot lot with play equipment and seating. The open space also will contain a pedestrian footpath, linking to the local activity centre to the south by an underpass under the arterial.

Mixed Housing
Scale 1:2500





Initial Development & Landscaping

Scale 1:2500



Multiple Housing Area

Community College

Townline Road



Martin Myers 77

Implementation

7



Implementation

7

Status of Townsend

When the planning of Townsend commenced in January of 1976, the target date for the first housing was 1978. In the intervening period, Stelco has postponed the completion of the first phase of the Nanticoke plant from 1978 to early 1980, and the Regional Council has requested a delay in the start-up date for the development of Townsend. In the light of current economic trends, the Province has agreed with the position of Regional Council that this target is premature.

At the same time, the Province wished to proceed with Townsend on an orderly basis, and to ensure that sufficient lead time is available to negotiate the required agreements, arrange financing for development, undertake the construction of necessary services, and build affordable housing for the incoming workers.

Accordingly, the Province has presented to Regional Council for their consideration and discussion the following eight point program:

- 1) The new community of Townsend should be developed as the major urban place within the Region of Haldimand-Norfolk.
- 2) The Townsend plan should be incorporated in the Regional Official Plan, which should also indicate how the growth of the existing communities and Townsend can be closely related.
- 3) The Province will commence a phased construction program of trunk water and sewage services for the Nanticoke industrial complex and Townsend. Jarvis and Hagersville will be included in the water service system, and Waterford and Port Dover in the sewer system, as required.
- 4) The Province will also accept the ultimate responsibility for this investment in trunk services should the anticipated population or industrial growth in the Region not materialize as anticipated. Details of the system and cost recovery will be negotiated with the Region.
- 5) First housing will be completed in Townsend in late 1980 or early 1981.
- 6) The Province will establish in the near future an agency to be responsible for the development of Townsend, and will ensure that the Region of Haldimand-Norfolk and the City of Nanticoke are represented on the body governing this organization.
- 7) This development agency will submit all plans for the development of Townsend in accordance with the procedures contained in The Planning Act.
- 8) The Townsend planning proposals summarized in this report will be presented for review and evaluation to the Regional Council. Other public agencies, the residents of the Region, and all other interested parties also will be given an opportunity to comment on the proposals for Townsend. At the conclusion of the review, the Province will meet with the Region to determine the acceptability of the Townsend plan or the need for revision.

Finance for Townsend

The policy of the Province is to assist the Region of Haldimand-Norfolk to accommodate major urban and industrial growth. As part of this policy, the Ontario Land Corporation has financed the assembly of land at Townsend. The planning of Townsend has also been directed and financed through the Ministry of Housing.

Although most of this investment in land and planning will be recovered through the disposal of land, the Province is determined to ensure that housing in Townsend is available at affordable prices.

As proposed in the eight point program, the Ministry of Environment will advance the monies required for the new water and sewer facilities serving the Nanticoke industrial area, Townsend and the nearby communities. These costs are to be recovered through user charges, according to an agreement to be negotiated between the Ministry and Region. The service rates will acknowledge the current and anticipated rates in the Region for comparable services. However, the Province will accept the risk for covering the investment, if the anticipated growth does not occur.

The costs incurred over the first ten years by the Region and other boards and agencies as a direct result of Townsend's development can be covered by the new assessment derived from Townsend and the Nanticoke industrial area, according to a recent provincial-municipal study*. Any additional costs incurred by the City of Nanticoke will be minimized by increased revenues from normal taxation and cost-sharing arrangements, and other financial arrangements as required.

Private sector builders and developers will undertake the financing and development of local services and related infrastructure, as required under municipal subdivision agreements. The private sector also will finance and build the housing and associated commercial and industrial facilities in Townsend as in any other community.

Development of Townsend

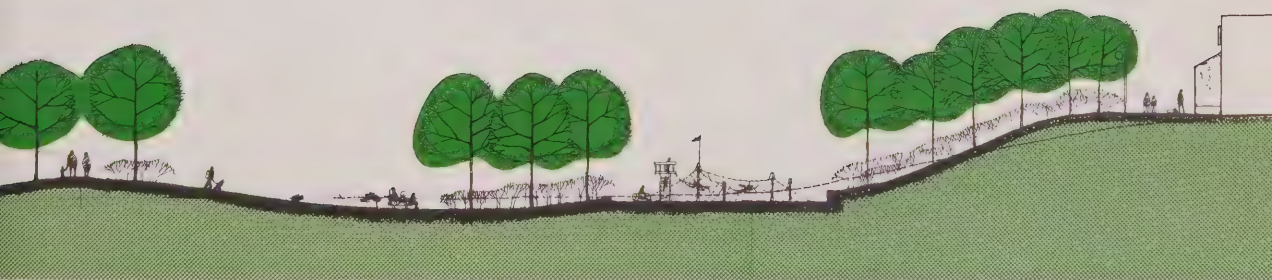
The Province will establish an organization to be responsible for the overall development of the provincial land assembly in Townsend. The Region of Haldimand-Norfolk and the City of Nanticoke will be represented on the body governing this development organization. For example, they could be represented on the board of directors, if this organization takes the form of a development corporation created by legislation.

*Strategic Planning Services Incorporated for the Technical Committee on Finance for the Townsend Program: "Financial Impact of the Nanticoke Industrial Complex and Related Residential Development on Various Municipalities and Boards in Haldimand-Norfolk (1977-1986)", January 1977.





The development organization will function mainly as a land developer, operating under policy guidance from the Ministry of Housing. It will submit the appropriate planning documents to the Regional Municipality for the approval of official plan amendments or subdivision plans. The development agency will neither supplant nor supersede normal municipal responsibilities or authorities. It will develop Townsend according to the approved plans, through the disposition of land to private builders and developers and, where appropriate, to federal, provincial or municipal agencies.



Next Steps

The Province will be discussing with the Region the current eight point proposal to reach agreement on the planning and development of Townsend.

The planning work summarized in this report also will be presented to all interested members of the public so they can contribute to the discussion of Townsend. The comments made by private individuals and groups will be incorporated in a report to the Minister of Housing. These comments will assist in any necessary revision to the plan for Townsend, and in future detailed planning.

During this period, it is expected that the development organization responsible for Townsend will be established. Following these discussions and presentations, the development organization will seek the necessary plan approvals from the Regional Municipality.

The Ministry of Environment will also begin the construction of the necessary regional water and sewage trunk services, and the storm water drainage system. Road improvements will also be undertaken.

The Region may wish to decide whether or not to proceed with construction of the regional administrative centre on the site identified early in the planning process. The City of Nanticoke also may wish to continue discussions on the possibility of locating its civic administration offices in Townsend.

Once the development infrastructure is in place, the initial housing and associated facilities can be completed according to subdivision agreements. The rate of development will reflect the pace of population growth in Haldimand-Norfolk with due regard to orderly development in the other urban centres in the Region.

Appendices



Land Budgets Housing Schedules

A

Land Budget for Strategic Plan (100,000 Population)

Land-Use	ha	a
<i>Housing Areas</i>		
Net housing area*	1,210	2,990
Local parks and pedestrian system	160	400
Elementary schools	65	160
Local shops and community facilities	5	10
	1,440	3,560
<i>Secondary Centres</i>		
Shopping facilities	15	35
Secondary and other schools	35	90
Community parks	35	90
Community facilities	15	35
	100	250
<i>Town Centre**and Associated Facilities</i>		
Shopping and commercial facilities	20	50
Community facilities	10	25
Recreation facilities and open space	10	25
Vehicular and pedestrian circulation	15	35
Community college	15	35
	70	170
<i>Employment Areas</i>	200	500
<i>Major Open Space***</i>	240	590
<i>Arterial Rights-of-Way</i>	200	500
<i>Undesignated Land</i>	300	730
Urban Area	2,550	6,300
<i>Farmland</i>	2,800	6,920
<i>Parkland along Nanticoke Valley</i>	380	930
Rural Area	3,180	7,850
Townsend	5,730	14,150

*The net housing areas include local roads
 **The housing in the town centre has been included in the housing area
 ***The area includes all lands within valleys and associated woodlots within urban envelope



Land Budget for the Town Centre (100,000 Population)

	100,000 Population Floorspace (m ²)	Site Area* (ha)
Shopping facilities	95,000	12
Offices and other commercial space	58,000	10
Housing development (3,000 dw)	40	
Community facilities	47,500	11 1/2
Open space and recreation facilities	-	12
Circulation infrastructure	-	13 1/2
Total	200,500	99

*with associated car parking

Housing Land for 5,000 Population

Density Range	Net Density		Mix (%)	Dwellings	Area	
	dw/ha	dw/a			ha	a
Low	17 1/2	7	39	408	23	58
Medium	30	12	53	887	30	74
High	75	30	8	113	1 1/2	4
Total/ Average	26	10 1/2	100	1,408	54 1/2	136



Land Budget for Detailed Plan (5,000 Population)

Land-Use	ha	a
<i>Residential Area</i>		
Net housing area:		
low density (400 dwellings)	23	58
medium density (887 dwellings)	30	74
high density (113 dwellings)	1 1/2	4
Elementary schools (K to 8):		
public (600 pupil places)	3	7 1/2
separate (340 pupil places)	3	7 1/2
Local parks	3	7 1/2
Playgrounds	2	5
Pedestrian system	2	5
	67 1/2	168 1/2
<i>Initial Centre (exclusive of housing)</i>		
	1	2 1/2
<i>Special Facilities</i>		
Regional administrative centre	1	2 1/2
Community college (with secondary school facilities)	3	7 1/2
	4	10
<i>Employment and Utility Areas</i>		
Public works depot	8	20
Retention ponds	4	10
	12	30
<i>Circulation Infrastructure</i>		
Town-wide pedestrian and bicycle routes	2	5
Arterial roads	8	20
	10	25
Total	95	236



Land Budget for the First Activity Centre

Components	ha
1. Housing development: 40 apartment units with parking	0.5
2. Commercial and community facilities:	0.2
general store	700 m ²
personal services and bank	650
restaurant	200
liquor/beer/wine outlet	75
professional offices	150
Townsend project offices	500
marketing centre and meeting hall	500
3. Public plaza and open space	0.3
4. Car parking: 150 spaces approximately	0.5
Total	1.5

Land Budget for Draft Subdivision Plan

Components	ha	a
Housing subdivision:		
separate lots (548 units)	34.5	85.2
multiple parcels (95 units)	2.7	6.7
School sites:		
public elementary	3.4	8.4
separate elementary	3.2	7.9
Open space	7.3	18.0
Service station	0.3	0.7
Initial activity centre (40 apartments)	2.8	6.9
Retention pond and associated open space	2.6	6.4
Community college	13.7	33.9
Nanticoke valley housing area (209 units)	10.1	25.0
Total	80.6	199.1

Housing Schedule for Draft Subdivision Plan

	Lot Size (m)	Number	%
<i>Sale Units</i>			
Single detached houses	15 x 30	70	10
	12 x 30	134	20
Semi-detached houses	9 x 30	56	8
Quadruplex	4 1/2 x 15	88	13
Link houses	7 1/2 x 30	58	8
Townhouses	6 x 30	142	21
		548	80
<i>Rental Units or Condominiums</i>			
Apartments (75 dw/ha)		40	6
Multiple housing (35 dw/ha)		95	14
		135	20
Total		683	100
Nanticoke Valley Housing Area		209	
Total		892	

Acknowledgments

B

The Townsend Advisory Committee

Membership as of the last meeting included:

Chairman

Mr. William Hodgson, M.P.P.,
Parliamentary Assistant to the Minister of Housing

Mr. John McCombs,
Regional Chairman of Haldimand-Norfolk

Mr. John Pow,
Mayor of the City of Nanticoke

Mr. David Peirson,
Mayor of the Town of Haldimand (former Chairman of Planning and Development Committee of Council)

Mr. James Allan

The Nanticoke Liaison Committee

Membership as of the last meeting included:

Chairman

Mr. Robert Ryerse,
Councillor, City of Nanticoke

Mr. John Pow,
Mayor of the City of Nanticoke

Mr. George Dmetriuc,
Councillor, City of Nanticoke

Townsend Community Development Program staff

Technical Committee on Environmental and Agricultural Planning

Member Representatives:

Ministry of Housing
Ministry of the Environment
Ministry of Natural Resources
Ministry of Agriculture and Food
Ministry of Culture & Recreation
Regional Municipality of Haldimand-Norfolk

Technical Committee on Economic & Social Planning

Member Representatives:

Ministry of Housing
Ministry of Health
Ministry of Industry and Tourism
Ministry of Education
Ministry of Community and Social Services
Ministry of Culture and Recreation
Ministry of Treasury, Economics and Intergovernmental Affairs
Regional Municipality of Haldimand-Norfolk

Permanent Observers:

Haldimand Board of Education
Haldimand-Norfolk Roman Catholic Separate School Board
Norfolk Board of Education
Department of Manpower and Immigration

Technical Committee on Engineering and Transportation

Member Representatives:

Ministry of Housing
Ministry of the Environment
Ministry of Transportation and Communications
City of Nanticoke
Regional Municipality of Haldimand-Norfolk

Technical Committee on Development Standards

Member Representatives:

Ministry of Housing
Ontario Housing Corporation
Regional Municipality of Haldimand-Norfolk

Technical Committee on Finance

Member Representatives:

Ministry of Housing
Ministry of Treasury, Economics and Intergovernmental Affairs
Ministry of the Environment
City of Nanticoke
Regional Municipality of Haldimand-Norfolk

Organizations:

Bell Canada
Canadian National Railway—London District
Community Services Association of Haldimand-Norfolk
Consumers' Gas Company
Eva Brook Donly Museum
Garnet Women's Institute
Haldimand Museum
Haldimand-Norfolk Health & Social Service Agency Administrators' Group
Haldimand-Norfolk Information Centre
Inter-Church Planning Committee of Haldimand-Norfolk
Long Point Region Conservation Authority
Mohawk College of Applied Arts & Technology
Nanticoke Museum Board
Norfolk & Haldimand Land Registry Offices
Ontario Hydro
Public Libraries of Jarvis, Caledonia, Waterford & Hagersville
Simcoe Horticultural Experimental Station
Texaco Canada Limited
The Steel Company of Canada
The Urban Development Institute
Townsend Historical Society
Tyrrel Women's Institute
Union Gas Company
United Steel Workers — Local 1005
University of Guelph
University Women's Club of Norfolk
Villa Nova Women's Institute

Appreciation is also extended to the many individuals, too numerous to mention, who have contributed to the Townsend project, and those agencies of the Province, the Region, the City of Nanticoke, and the private sector who assisted throughout the planning process.

Technical Reports

C

Financial Impact of the Nanticoke Industrial Complex and Related Residential Development on Various Municipalities and Boards in Haldimand and Norfolk 1977-1986, Strategic Planning Services Incorporated, January 1977.

Key Lot Study, John Bousfield Associates, February 1977.

Landscape Study, Stefan Bolliger Landscape Architects, March 1977.

Phase I Report, March 1976; *Phase II Report*, September 1976; *Phase III Report*, March 1977; Llewelyn-Davies Weeks Canada Ltd., Peter Barnard Associates, John Bousfield Associates, De Leuw Cather Canada Ltd., Ecoplans Ltd.

Preliminary Design Study for a Portion of Townline Road and New Regional Road 69, De Leuw Cather, February 1977.

Residential Site Planning Study, Volumes 1 and 2, Llewelyn-Davies Weeks Canada Ltd., Peter Barnard Associates, Stefan Bolliger Landscape Architects, John Bousfield Associates, Jerome Markson Architects, February 1977.

Soils of the Townsend Town Site, Department of Land Resource Science, University of Guelph, 1976.

Geotechnical Investigation Stages I and II, Golder Associates, 1976, 1977.

Townsend Environmental Appraisal, Ecoplans Ltd., March 1977.

Town Centre Planning Study, Llewelyn-Davies Weeks Canada Ltd., March 1977.

Townsend Traces: Heritage Conservation in Townsend New Town, Heritage Planning and Research Branch, Heritage Conservation Division of the Ministry of Culture and Recreation, September 1976.

Credits

D

Ministry of Housing

The technical work was directed by the Townsend Community Development Program under Mr. Wojciech Wronski, Assistant Deputy Minister, Community Planning.

Consultants

Prime consultant:

Llewelyn-Davies Weeks Canada Ltd.

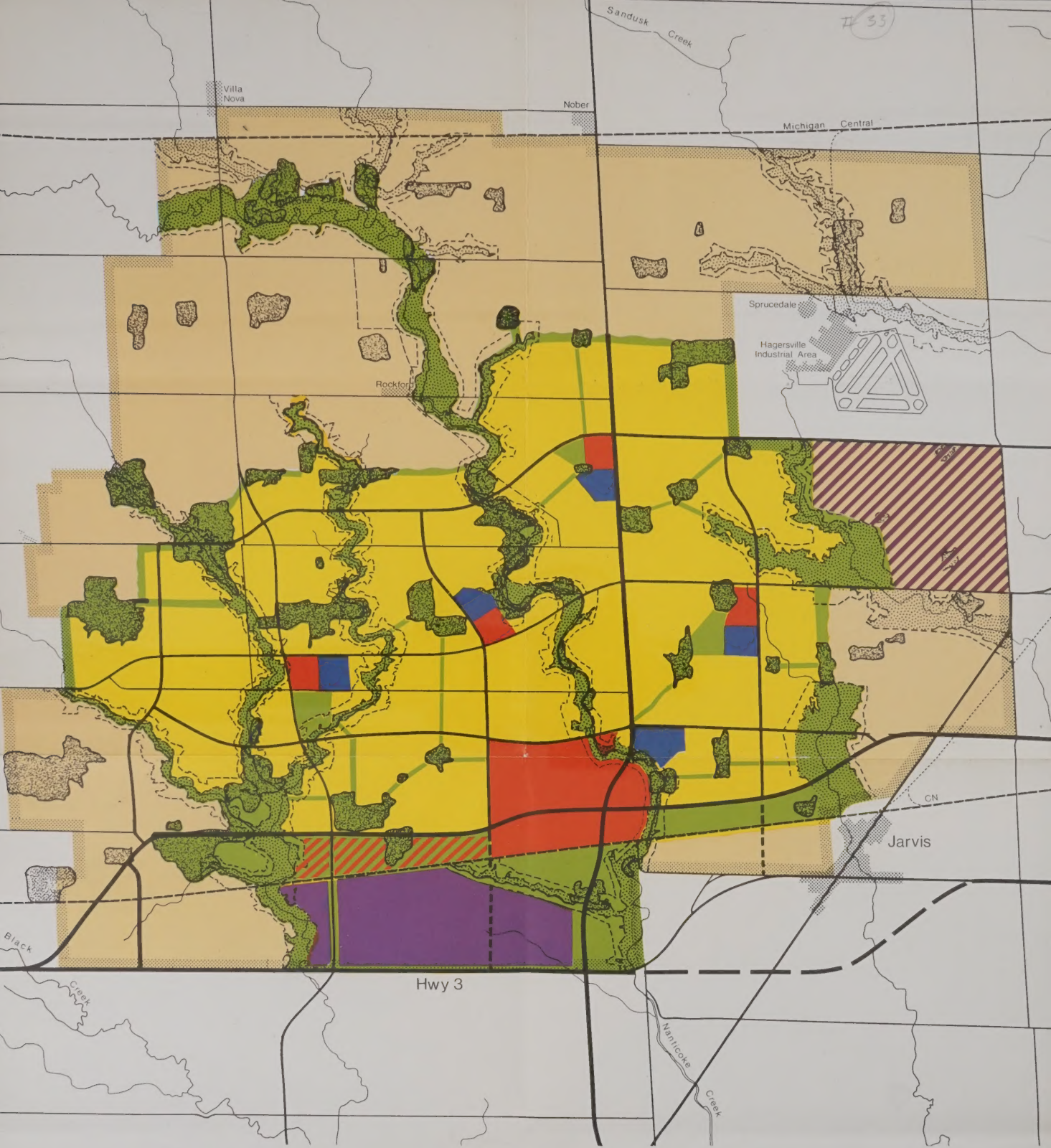
Associated consultants:

Peter Barnard Associates
John Bousfield Associates
De Leuw Cather Canada Ltd.
Ecoplans Ltd.













Special Studies:

Archaeological Research Associates
Stefan Bolliger Landscape Architect
Terry Brown Graphics
Ecological Services for Planning Ltd.
Golder Associates
University of Guelph (Dr. W. Chesworth)
Jerome Markson Architects
Barton Myers Associates
Strategic Planning Services Inc.
B.J. Wallace






Strategic Plan 100 000 Population

- | | |
|--|--|
|  Housing Areas |  Regional Arterials |
|  Mixed-Use Activity Centres |  Town Arterials |
|  Major Educational Uses |  Existing Roads |
|  Employment Areas |  Railways |
|  Open Space | |
|  Agricultural Uses | |
|  Pedestrian Network | |
|  Existing Development | |

25
HECTARES

25
ACRES


 Date March 77
 Scale 1: 25000

1KM
1MI

TOWNSEND COMMUNITY DEVELOPMENT PROGRAM

